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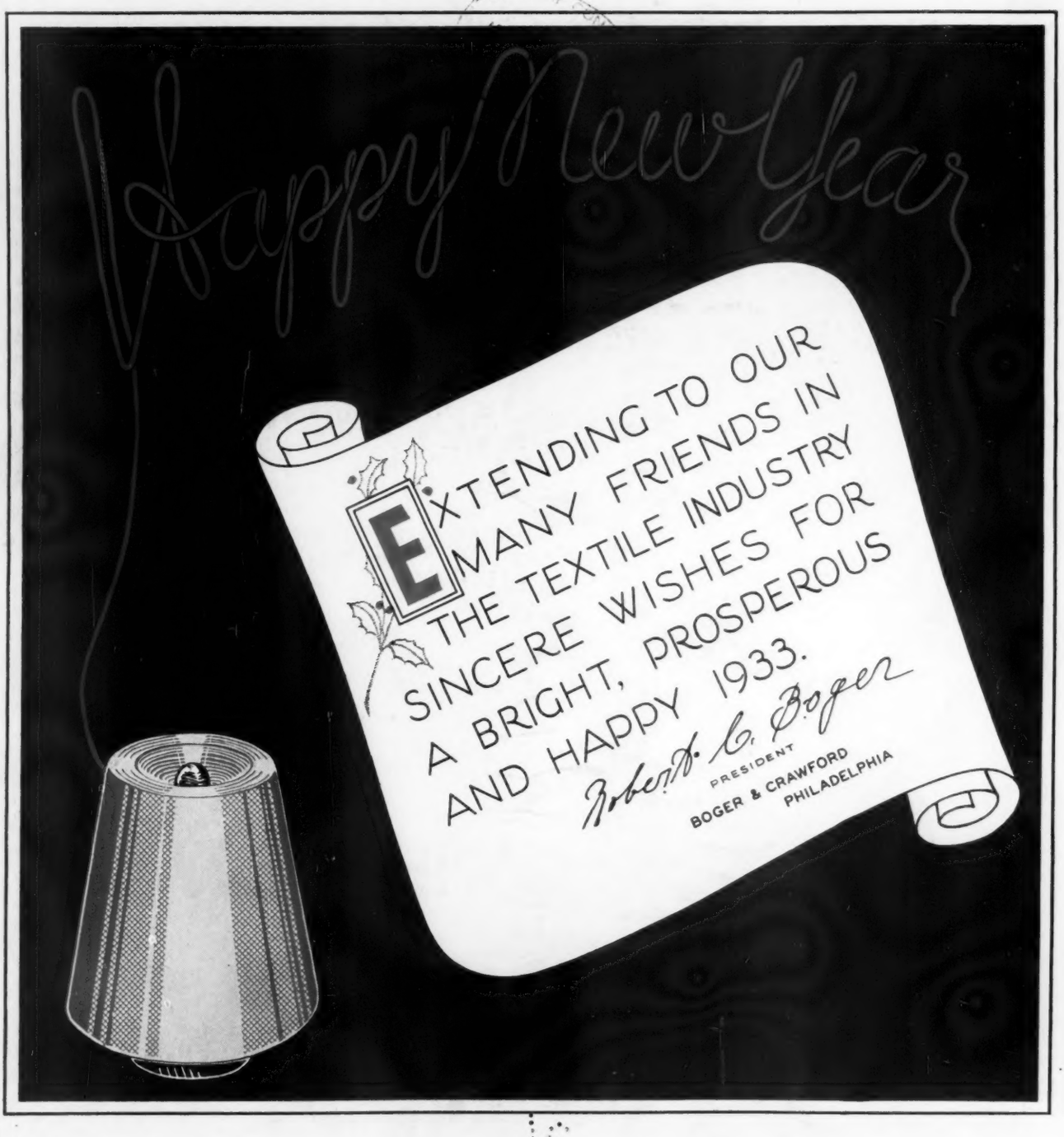
JANUARY, 1933

COTTON

Serving the

TEXTILE INDUSTRIES


Happy New Year
EXTENDING TO OUR MANY FRIENDS IN THE TEXTILE INDUSTRY SINCERE WISHES FOR A BRIGHT, PROSPEROUS AND HAPPY 1933.
Robert T. C. Boger
PRESIDENT
BOGER & CRAWFORD
PHILADELPHIA

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TS1550
C8

If it's NEW to you . .
IT'S TIME TO SAMPLE
VATROLITE
SODIUM HYDROSULPHITE
REG. U.S. PAT. OFF.
You be the judge of what may be new — improved — effects. This latest development of the Royce laboratories . . this new Hydrosulphite is named to fit performance! . . to suit the purpose of Stripping and Reducing colors in the vat!
VATROLITE . . newest output of its type . . stands high up on the scale of purity and strength . . above all, uniformity! Put it to a test, and check results.
VATROLITE is always on call from ready stock . . in required volume . . delivered in damp-proof drums of 50, 100 or 250 lbs. capacity.
ROYCE CHEMICAL COMPANY
Manufacturing Chemists
CARLTON HILL • NEW JERSEY
NEW ENGLAND REPRESENTATIVES: RICHARD HAWORTH, Inc., 25 FOUNTAIN STREET, PROVIDENCE, R. I.
Match a working sample against your own ideas of a perfect bleaching agent. We'll send it free!

COTTON is published monthly by W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign countries, $2.00 per year. Entered second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

REPAIR PARTS
FOR

NORTHROP

STAFFORD

HOPEDALE

LOOMS

Stafford Shuttle Changing
Stafford Bobbin Changing
Looms of 1 x 1 Type
And Hopedale Looms
Are Now Draper Products

Experienced Men from both concerns are now with us.

We have Records, Drawings and Patterns of the parts for these Machines.

We make Repair Parts for these looms and are now well stocked with them.

We aim to give Speedy Service in Quality Parts that fit these looms.

Substitute Loom Repairs

Handicap your Weavers
Handicap your Loomfixers
Handicap your Overseers
Handicap your Production
Handicap the Quality of your Cloth

Why Buy Substitutes
and Handicap Your Mill?

DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C

now—

is the time to replace UNDER-CLEARERS

Equip thruout with SONOCO ROLLS and lower your maintenance costs in—

1933

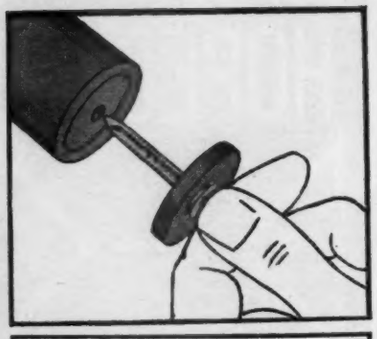
—and 1933 will likely see mills put to supreme tests of economy and efficiency. Even so small an item as maintenance-saving on under-clearers cannot be overlooked, and there is no better time than NOW—to start.

Many mill operators, keenly seeking out every manufacturing advantage, have been standardizing on SONOCO Under-Clearer Rolls for years, because of their proven economic advantages.

We can furnish complete information upon receipt of a sample and number of rolls you are now using.

The ONLY UNDER-CLEARER ROLL having a permanent core to fit the FAMOUS SONOCO—

20,000 Hour Re-cover Tube



sonoco

PRODUCTS COMPANY

HARTSVILLE, SOUTH CAROLINA

Mills: Hartsville, S. C.
Rockingham, N. C. and
Plainfield, New Jersey

New England Representative, P. O. Box No. 170
New Bedford, Mass.

Eastern Sales Office at 709 West Front St., Plainfield, New Jersey

HAVEG piece dyeing machine, 6½ feet wide

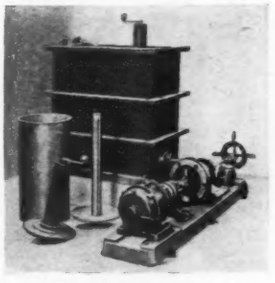
HAVEG

Of particular interest to the entire textile industry, especially that part engaged in wet processing, is the appointment of H. W. BUTTERWORTH & SONS CO., as sole HAVEG distributor in the industry by the HAVEG CORPORATION Newark, Delaware

HAVEG is a material which has an extremely high resistance to most acids. For eight years HAVEG has been the accepted material in European countries, especially in Germany, for tanks, dye vats, and dyeing machines, agitators, acid pumps, pipes, drying trays, pan and duct work. It also is applicable to air filters, drying equipment, and buckets and dippers, and acid storage vessels.

HAVEG is about 1/5 as heavy as iron—it does not deteriorate with age—withstands blows and shocks to a remarkable degree and does not easily chip or fracture. It can be used safely in temperatures up to 265 deg. F., and is indifferent to rapid changes of temperature.

Vats, kettles, tanks, and so forth, can be readily cleaned by flushing out with water, for HAVEG is absolutely non-absorbent and all surfaces are smooth and jointless.



Package Dyeing Installation

Representative HAVEG Corrosion-Resistant Piping

Complete description of HAVEG properties, together with illustrations of parts moulded of this new remarkable material, will be sent promptly upon request

H. W. BUTTERWORTH & SONS CO.
Established 1820
PHILADELPHIA, PA.
PLANTS *at* PHILADELPHIA *and* BETHAYRES, PA.

New England Office:	*Southern Office:*	*In Canada:*
TURKS HEAD BUILDING	JOHNSTON BUILDING	W. J. WESTAWAY CO.
Providence, R. I.	Charlotte, N. C.	Hamilton, Ontario

BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF RAYON AND FINISHING MACHINERY FOR THE TEXTILE INDUSTRY

There Is No Better Picking Than

Aldrich Synchronized Single-Process Picking

More than 300 installations are in use on different makes of picking machinery, and they fully prove our claim that this is the simplest, least expensive, and best method of changing pickers to the single-process system.

From the standpoint of first cost, and last cost; quality of work, and quantity of production, there is no better system of operating single-process pickers.

More Than 600,000 Bales Of Cotton A Year Are Being Made Into Laps On Aldrich Synchronized Single Process Pickers.

From Cotton Mills all over the United States come reports of evener and cleaner yarns, and lower costs in spinning and weaving, due to better running work.

This system can be applied to almost any kind of picking machines, and the cost is surprisingly low.

Made and installed by

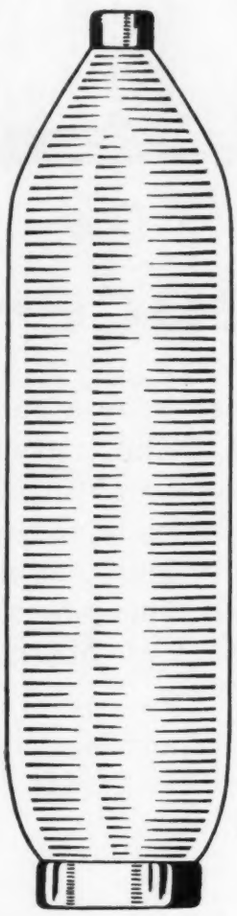
AldricH MachinE WorkS

Greenwood S. Carolina

LARGE PACKAGE SPINNING

with low doffing cost per pound--

or SMALL PACKAGES *at high per-pound cost?*

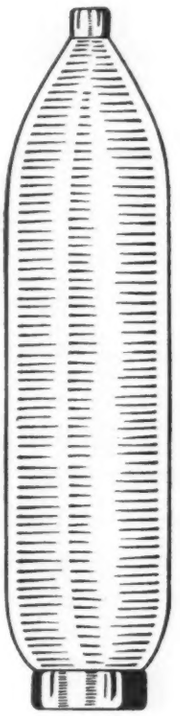


The worker can handle the large package bobbin on the left just as rapidly as he can the small one on the right. At the day's end the amount of yarn he has doffed on large package spinning may be double that of small package spinning.

The Textile Industry is becoming hard on the marginal producers—those with old machinery, antiquated ideas, high-cost methods. The progressive mills are making money now, today—and will make more as the months pass and better business becomes a reality.

The Whitin Model "F" Large Package Spinning Frame is designed for mills that are looking ahead—that want machinery which will definitely reduce their costs and permit a satisfactory profit at today's prices. Spinning mills equipped with Whitin Model "F" Large Package Spinning do not need to worry over low selling prices. Their favorable costs will keep them profitable.

Model "F" Frames can be supplied with Casablancas Long Draft Spinning if desired. Ask us to arrange a demonstration.



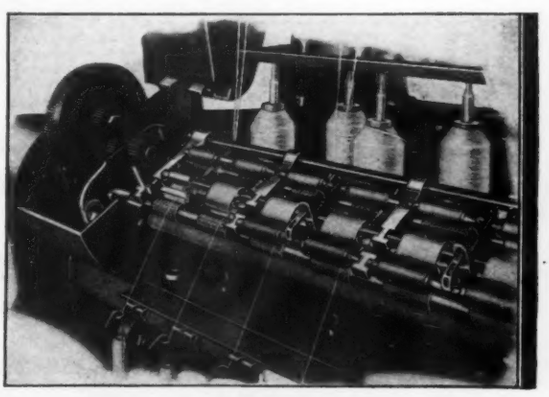
WHITIN
MACHINE WORKS

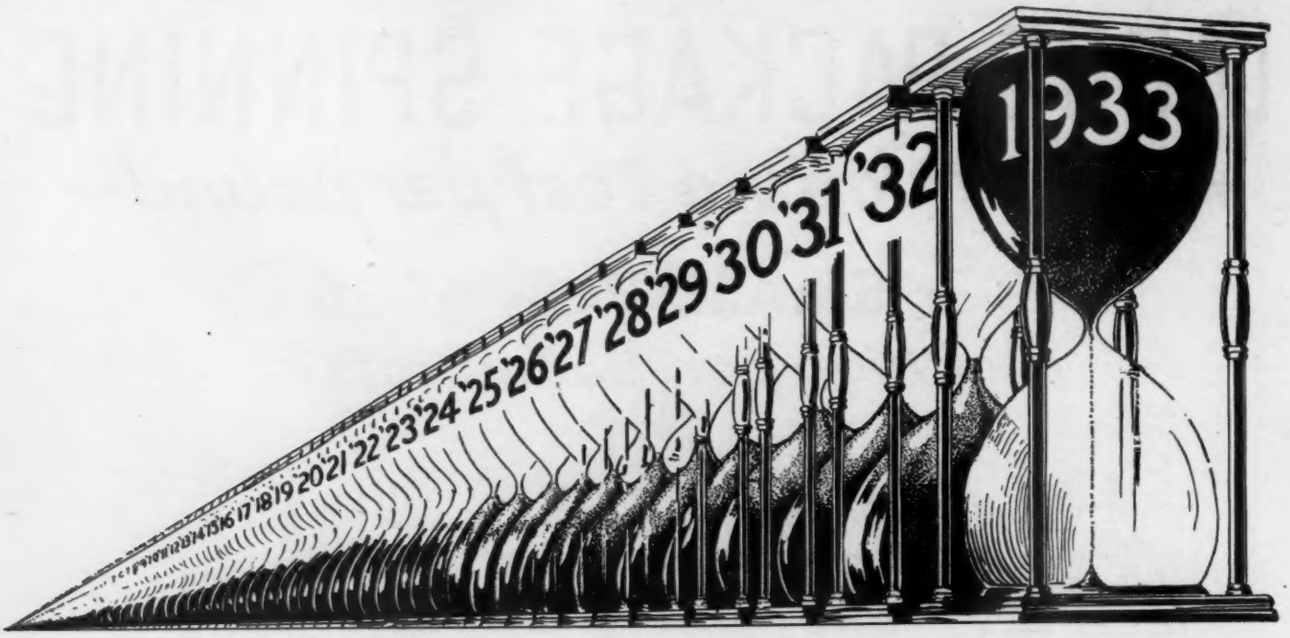
ESTABLISHED 1831

Fales & Jenks Division
Woonsocket Machine and Press Division

Whitinsville, Massachusetts, U. S. A.

Charlotte, N. C. Greenville, S. C. Atlanta, Ga.





67 Years experience—

The first cost of card clothing is far less important than the question of the quality of the clothing. It is this quality which gives TUFFER Card Clothing long life and service, and guarantees more pounds of production with less waste in stock.

In our 67 years of experience, the results of TUFFER Card Clothing have been so gratifying, even from the pioneer days, that we now fully guarantee it against shelling out under all working conditions, to take grinding easily and perfectly, to hold point longer, to strip easier, afford closer setting without damaging the point—meaning MUCH MORE EVEN CARDING.

Don't be led into later regrets. Consult a Howard Brothers expert on your particular problem.

HOWARD BROS. MFG. COMPANY

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plant
244 Forsyth St., Atlanta, Ga.

Branch Offices:
Philadelphia, Pa., Dallas, Texas, and Washington, D. C.

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.

CARD CLOTHING

Announcement--

To Mill Executives Who Have Been Waiting For Something Better Before Changing Over Their

TWO OR THREE PROCESS PICKING

TO

SINGLE PROCESS PICKING

The advantages of single process picking, with the worth-while savings in labor, power, improvement in uniformity and quality of laps, etc., is well known, but many mills have postponed changing over for various reasons including the reason that possibly the process had not been perfected.

Here at last is the answer to this argument. The keynote of our Single Process Picking is its simplicity, as well as sensitiveness. Its synchronization is not only the last word in sensitiveness, but it is RELIABLE.

Using your present pickers, this process will more than pay for itself in less than a year.

PRECISION SYSTEM OF SINGLE PROCESS PICKING challenges every other system for uniformity of laps and yard against yard in weight.

IT WILL PAY YOU TO INVESTIGATE. A line from you will bring our representative to your office. Arrangement can be made for a demonstration of our system at any one of the many mills that are using and profiting by the PRECISION SYSTEM OF SINGLE PROCESS PICKING.

Manufactured and installed by the

PRECISION GEAR & MACHINE CO.

121 WEST 8th ST., CHARLOTTE, N. C.

TAKE ADVANTAGE OF THESE PRICES!

Prices on many HENDERSON Superior Repair Parts have just been materially reduced, and now is your opportunity to save money and at the same time put your equipment in efficient condition.

LM-4916

$2.00

LM-5564

$2.90

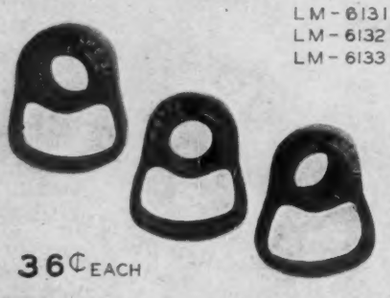
L-17457

50¢

LM-2343

$1.10

LM-6131
LM-6132
LM-6133



36¢ EACH

LM-5562

$1.25

L-49120

$1.25

22" GEARED BEAM HEAD

L-42067

$3.50

LM-5760

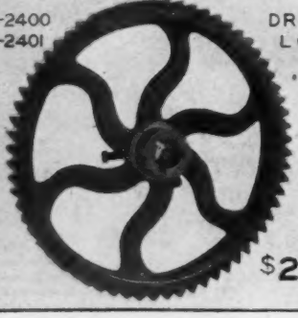
75¢

L-26508

$1.30

LM-2400
LM-2401

DRAPER LOOM GEAR



$2.90

LM-307

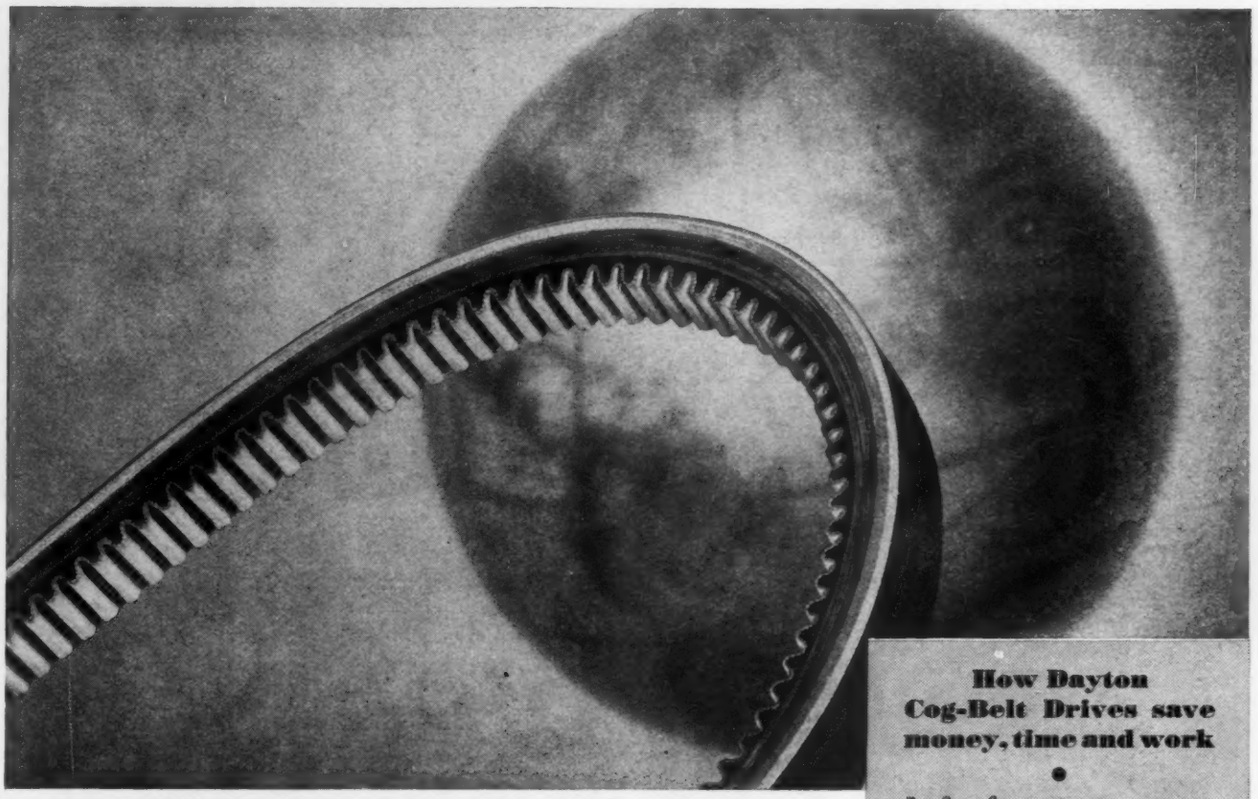
85¢

Replace your broken, missing or worn parts with HENDERSON Superior Repair Parts. Drop us a line today telling us of your needs and let us quote you attractive prices.

HENDERSON FOUNDRY & MACHINE WORKS

HAMPTON, GEORGIA.

ONLY *ONE* V-BELT DRIVE IN THE WORLD LIKE THIS



Patented construction of Dayton Cog-Belts gives outstanding advantages

Here are some quick facts for quick reading about Dayton Cog-Belts—facts verified by leading engineers in a "thousand" different industries.

These Belts are utterly different from any other made. They're built to bend. The patented cog section and laminated construction enable Dayton Cog-Belts to flex naturally and easily around even the smallest pulleys—without distortion, buckling or rippling. This permits shorter center-to-center couplings and saves valuable floor space.

And since the sides are die-cut—not molded—Dayton Cog-Belts have greater gripping power at any speed. There's no slipping or sliding—less tension is required—and there's less wear on bearings.

Furthermore, the "stretch" is removed in the process of manufacture—adjustments are seldom necessary. And a patented reinforcement gives extreme crosswise rigidity which prevents squashing in the pulley grooves. *Thus the Dayton Cog-Belt is the only V-Belt combining maximum flexibility and crosswise rigidity.*

In addition to providing these numerous operating advantages these exclusive and patented construction features are responsible for the longer life of Dayton Cog-Belts—belt replacement costs are often cut in half.

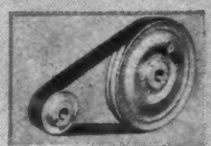
These are only the high spots. Send for information—without cost or obligation.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO.
Factory Distributors in Principal Cities and all Westinghouse Electric and Manufacturing Company Sales Offices

How Dayton Cog-Belt Drives save money, time and work

1—Save floor space.
2—Built-to-bend—no distortion—no internal heating.
3—Greater gripping power—no slipping or sliding.
4—Stretch removed—fewer adjustments necessary.
5—No dressing or lubrication.
6—Less tension required—easy on bearings.
7—Longer life—belt replacement costs often cut in half.
8—Quiet—Clean—Rugged.

Complete drives—pulleys and belts—in stock. Fractional to 100 H. P.



Investigate the exceptionally low cost of Dayton Cog-Belts with

DAY-STEEL PULLEYS

Built to Bend

Dayton

COG-BELT DRIVES

No Substitute for Leather

"Once upon a time" when men first started to build machines they found that leather—good leather—was the only material with the strength, resiliency and durability necessary to drive them.

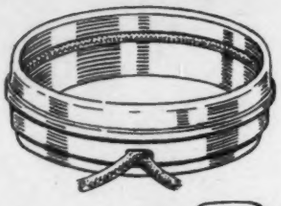
Today, with all the changes in design and methods, quality leather belting is still recognized as the most efficient medium for many important drives.

COCHECO Leather Belting—quality belting of the first order—is a steady favorite wherever leather belting is used. It is strong, resilient, durable—all that leather belting must be to give efficient and economical service.

The "COCHECO Book on Belts" tells why COCHECO Belting deserves its reputation for quality. Why it is first choice in so many cases where leather belting is used.

I. B. Williams & Sons, Dover, New Hampshire

DETROIT CHICAGO GREENVILLE, S. C. NEW YORK PHILADELPHIA



Patents granted and pending

Continuous wick gives thorough lubrication at every point of the circle.

Oil is supplied at actual contact, where most needed.

PERFECTED Ring lubrication pays a definite profit

THE PERFECT automatic lubrication of DIAMOND FINISH Eadie Rings for twisting is 1. Continuous. 2. Adequate. 3. Clean. The exclusive patented design delivers oil ALL AROUND the ring, in just the right quantity. Absolute cleanliness is assured. The advantages gained are: 1. Increased production because of no stoppage, faster speeds, less cleaning. 2. Cleaner, more even yarn. 3. Heavier travelers with longer life can be used.

Free samples gladly sent

Whitinsville (Mass.) SPINNING RING CO.

Devoted to making "DIAMOND FINISH" Spinning and Twister Rings since

1873

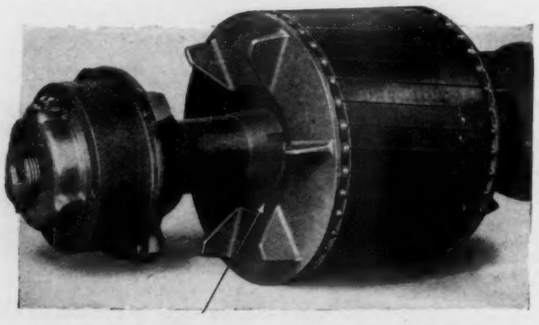
Seal-Clad

The stator windings are Seal-Clad, covered at both ends to provide a smooth, hard surface.

This new motor is specially designed for use in the textile industry. It is of the open type, Seal-Clad, and requires no screens or other devices for excluding lint or dust. Unobstructed air passages and smooth surfaces of all parts in the air paths permit free travel of lint or dust with the ventilating air.

The stator windings are covered at both ends, providing a smooth hard surface to which lint will not adhere. The integrally cast rotor fans are so shaped as to eliminate pockets where fly could collect. Discharge openings for the cooling air are large and smooth leaving no sharp edges. Motor housings have unrestricted inlet openings with smooth interior surfaces free from irregularities that would provide lodgment for fly.

In addition this new design provides for cartridge type ball bearings, waste packed, or ring oiling type, long leads for flexible conduit, and straight or tapered shaft extension.

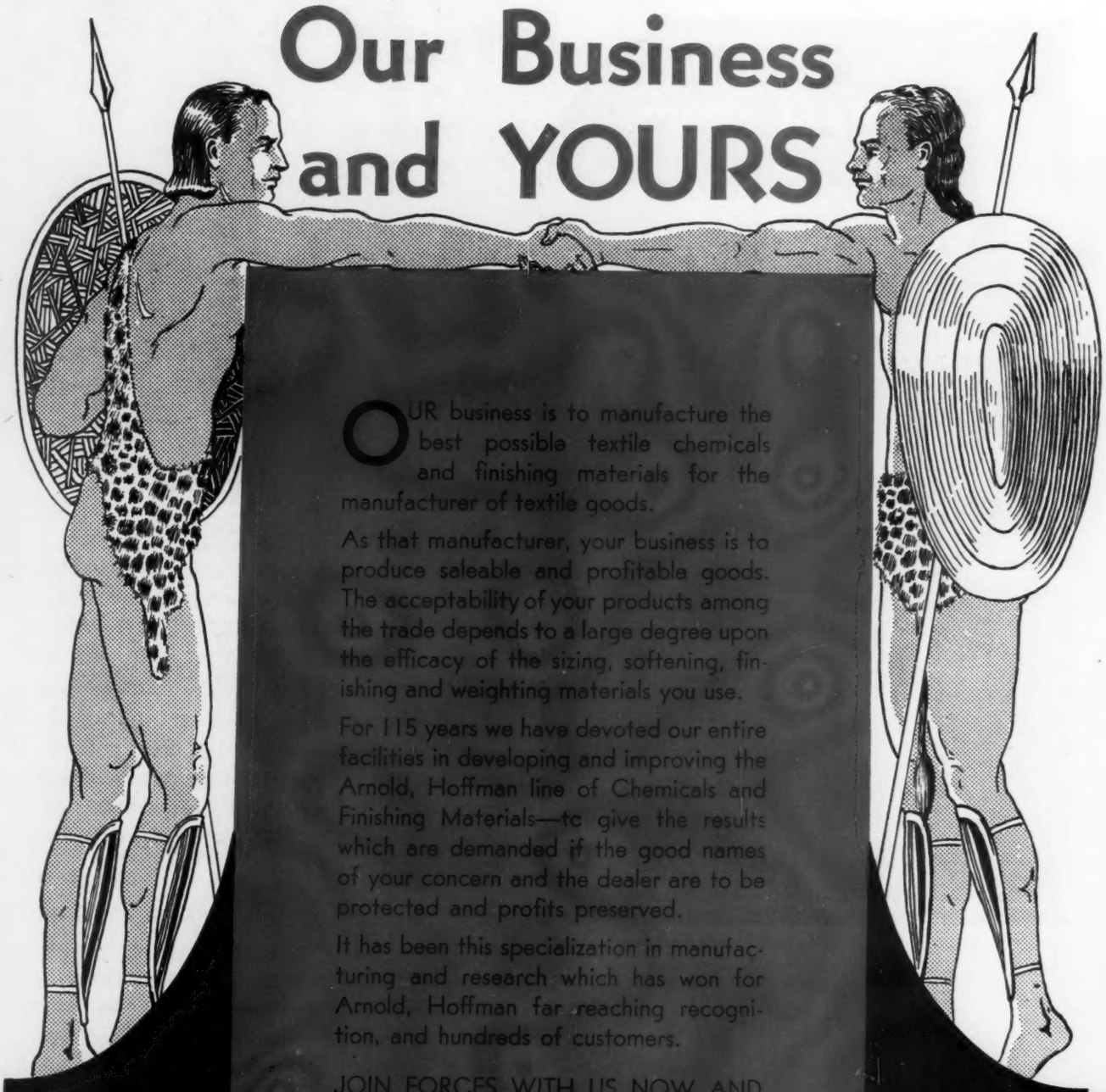


Rotor construction provides complete enclosure which prevents the entrance of lint or dust in the rotating element.

ALLIS-CHALMERS

Allis-Chalmers Manufacturing Company, Milwaukee

Our Business and YOURS



OUR business is to manufacture the best possible textile chemicals and finishing materials for the manufacturer of textile goods.

As that manufacturer, your business is to produce saleable and profitable goods. The acceptability of your products among the trade depends to a large degree upon the efficacy of the sizing, softening, finishing and weighting materials you use.

For 115 years we have devoted our entire facilities in developing and improving the Arnold, Hoffman line of Chemicals and Finishing Materials—to give the results which are demanded if the good names of your concern and the dealer are to be protected and profits preserved.

It has been this specialization in manufacturing and research which has won for Arnold, Hoffman far reaching recognition, and hundreds of customers.

JOIN FORCES WITH US NOW AND WE WILL FIGHT OUT THE ECONOMIC SITUATION TOGETHER.

PRODUCTS

Warp Dressing
Finishing Materials
Soluble Gums
Sizing Materials
Soaps, Soluble Oils
Sulphonated Oils
Alizarine Assistant
Pigment Colors

SOLE AGENTS for Belle Alkali Co., of Belle, W. Va.

Liquid Chlorine
Bleaching Powder
Caustic Soda—(Solid and Flaked)

ARNOLD, HOFFMAN & CO.
INCORPORATED
Providence — New York — Charlotte
Philadelphia — Boston
Established 1815

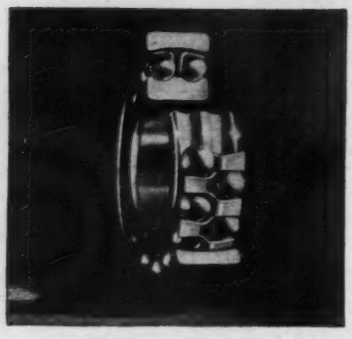
THE SKF GALLERY OF DISTINGUISHED PERFORMANCE USERS:

SACO-LOWELL SHOPS

QUALITY BEARINGS BY SKF FOR PERFORMANCE

DESIGNED to operate continuously at full load, the modern Saco-Lowell One-Process Picker is equipped with SKF Ball Bearings to insure unfailing operation at low cost. Essentially a heavy duty machine, the bearings are naturally subject to shocks at high speeds. Consequently, accurate alignment of the principal moving parts throughout the life of the machine becomes vitally important. To meet that demand, SKF Performance Takes Preference Over Price.

SKF Bearings promote confidence that the equipment will run for long periods of time, free from trouble and constant and expensive maintenance. These bearings are free from wear and need no adjustments. Furthermore, sealed housings prevent lubricant leakage, and the stock is noticeably free from oil streaks. The equipment, too, is free from dust, gum and dirt. All these factors are in keeping with the high standard of quality desired by Saco-Lowell.



SKF INDUSTRIES, Inc.
40 East 34th Street, New York, N. Y.

2965

WHERE PERFORMANCE TAKES PREFERENCE OVER PRICE

● *You may buy a bearing as a bargain but try and get a bargain out of using it, for nothing is apt to cost so much as a bearing that cost so little.*

SKF
BALL AND ROLLER BEARINGS

24 Years the Leader *in its field*

Sydney W. Fiske, 24 years active manager of the Diastafor Department.

Howard L. Jenkins, technical expert, who has been contacting the Textile Trade for the past 12 years.

THE history of Diastafor is one of continued growth and progress. This famous sizing, de-sizing and finishing agent was first offered to the Textile Industry in 1908 by the American Diamalt Company, a subsidiary of the Fleischmann Company. Accepted instantly by leading mill owners, its popularity has increased through the years.

In 1923, when the American Diamalt Company was taken over by The Fleischmann Company, Diastafor became known as Fleischmann's Diastafor. And in 1929, when the Fleischmann Company was made part of Standard Brands Incorporated, Fleischmann's Diastafor became one of its many important products.

During all these 24 years, Mr. Sydney W. Fiske has actively managed the Fleischmann Diastafor Department. Well known to the Textile Industry, Mr. Fiske has devoted his entire time to the marketing and improvement of this now-famous textile product . . . and to serving the industry. For the past 12 years he has been ably assisted by Mr. Howard L. Jenkins, a familiar figure to all textile men. Mr. Jenkins is a technical expert and is always available in solving problems of sizing, de-sizing and finishing.

Mill owners in the United States, Canada and South America, have found that in using Diastafor they actually get more than a dependable quality product. They get an unparalleled service, insuring an unfailing supply and personal assistance. For, Diastafor has not one, but three factories.

Warehouses strategically located so that every mill will always be able to get prompt service. And in its laboratories, continuous and exhaustive research is carried on by expert technicians, so that its manufacturers have been always able to supply a product of unfailing strength, consistency and color.

Diastafor, applied to Rayons, mixed goods and cottons, does a complete job of stripping starch without impairing the tensile strength or injuring delicate fibres. And with the recent improvement . . . making the color lighter . . . Diastafor can be used on white goods without danger of discoloration. Thus, it insures perfect dyeing and bleaching.

For further information, let our technical man advise, or write to—

FLEISCHMANN'S DIASTAFOR

DIASTAFOR DEPARTMENT

STANDARD BRANDS INCORPORATED

595 Madison Avenue — New York City

Cut down waste . . .

Increase production . .

Improve general running conditions!

SOLUPON S—For ordinary throwing and high twists. Particularly effective on China and Canton.

SOLUPON S W—For warp stock. Prevents warp streaks and facilitates weaving.

SOLUPON F F—For hygroscopic hosiery tram. Eliminates backwinding.

SOLUPON H N—For those who prefer a high take-up with the advantages of a self-emulsifying oil.

Write for complete particulars and working samples.

SOLUPON

SOAKING OILS

Special Types for Special Purposes

•

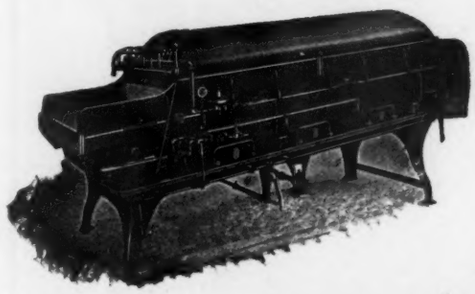
ARKANSAS COMPANY · INC·

233 BROADWAY NEW YORK

AC INC REG. U. S. PAT. OFF.

CHEMISTS TO THE TEXTILE INDUSTRY

FLAWLESS DESIGN, CONSTRUCTION
that shows up in operation



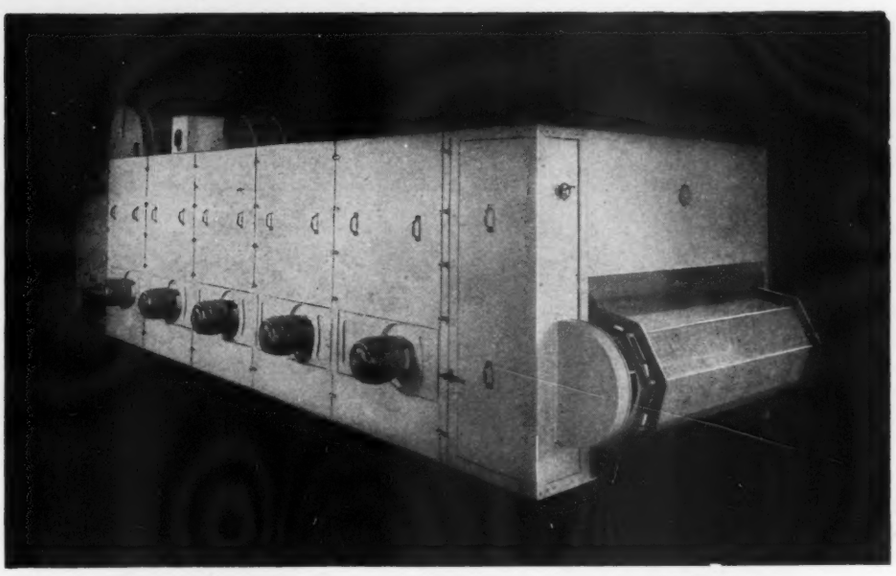
Manufactured to rigid quality and performance specifications—under constant test and supervision, each Sargent Textile Machine assures dependable and profitable results in operation.

THE NEW SINGLE APRON DRYER

No belts or guards. No vibration. Individual motor driven fans and apron drive. Lower horsepower and steam consumption. New hinged type apron conveyor---and many other features.

YARN CONDITIONING MACHINE

From this machine the filling can go to the looms in one half hour. Automatic in operation this machine conditions every batch evenly and uniformly.



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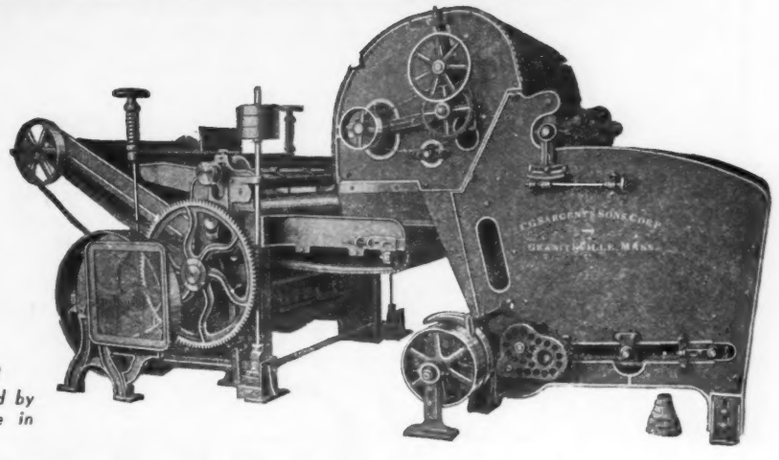

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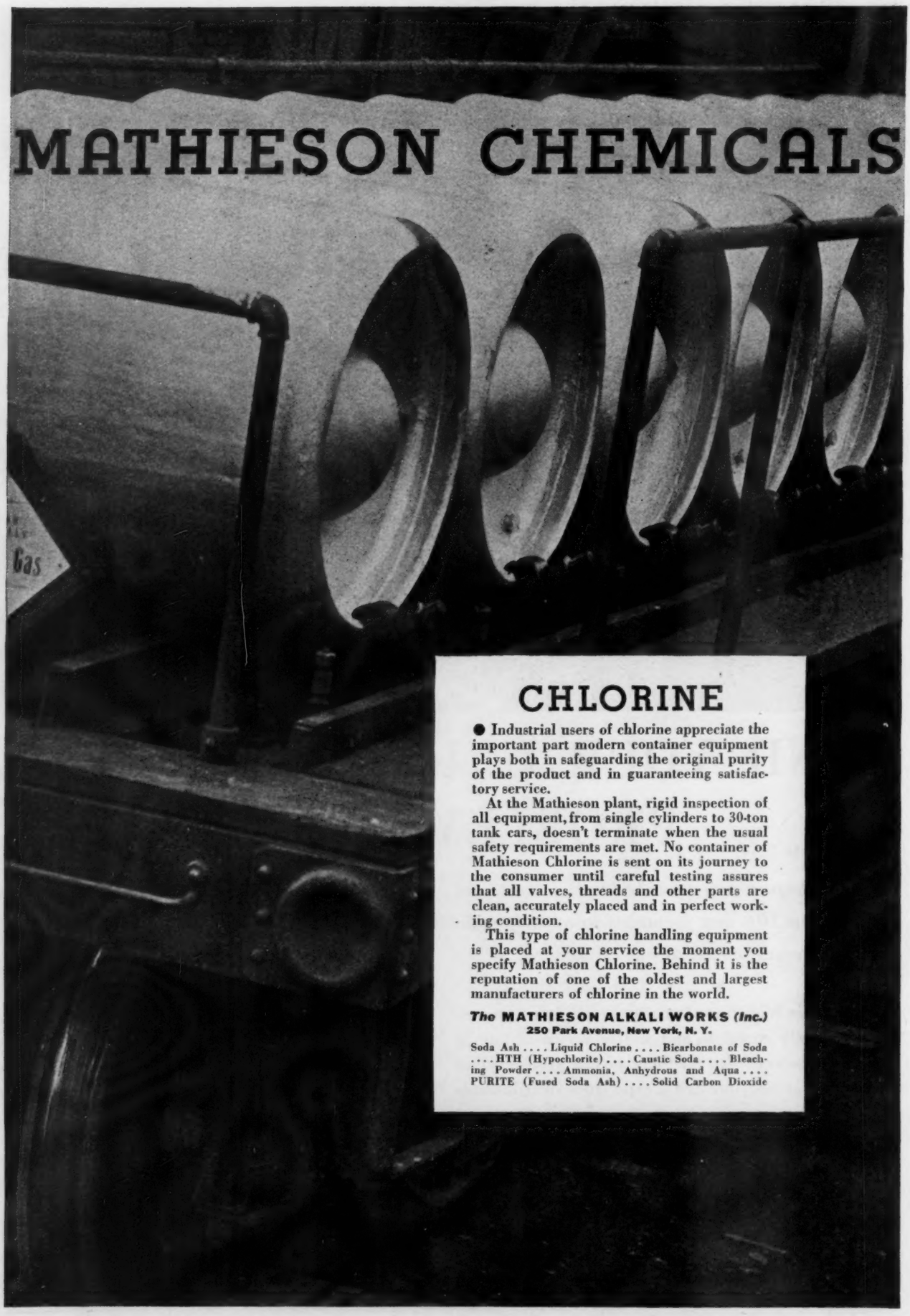

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Vol. 97 **COTTON** No. 1

January, 1933

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Vol. 97
No. 1

COTTON

January,
1933

Cotton Versus Jute Bagging for Cotton Bales

By Dunhill Marsden

A GREAT deal of specific information in regard to cotton bagging in competition with jute bagging, for cotton bales, as well as data on the important subject of selling cotton on a net weight basis, is given in this discussion of this timely subject. . . .

THE reader's mind is constantly beclouded by statements bringing up the argument, specious though it is, that a farmer pays a less amount for 21 to 24 pounds of jute bagging and ties than the price which he receives for his cotton, and this always nets him (the farmer) a profit; and that, therefore, it is to the farmer's advantage to use jute bagging.

These guardians of the goodwill and prosperity of the farmer are interested in him from a selfish standpoint. Since these advocates of the traditionary methods of wrapping and marketing cotton are thus motivated, it may be proper for a third friend to advocate a change in tradition and thereby help the farmer and incidentally help others.

In discussing our selfish interest in the financial welfare of the farmer we must refer to the need for an adequate tariff on jute and the marketing of cotton on a "net weight basis".

An adequate tariff on jute—one sufficient to make it commercially competitive with cotton—would increase the use of cotton, according to some fair estimates, at least one million bales. This increased use of American cotton in American markets would have a tendency to increase the normal price of cotton between one cent and two cents per pound, according to the opinion of many very reliable people.

If cotton were not sold on a net weight basis but sold in a market safely protected by an adequate tariff on jute the southern farmer could receive, according to the above estimates, approximately $5.00 per bale—or $70,000,000.00 — more for his crop of 14,000,000 bales.

If the farmer could fully appreciate this fact and impress upon his senators and congressman the necessity of their securing this tariff for him, he would profit greatly thereby even though he might still prefer to wrap his cotton in jute bagging at a higher cost.

The real problem, however, does not stop simply with the securing of an adequate tariff on jute.

Selling cotton on a net weight basis is the next great improvement in marketing that should be effected.

According to reports, cotton is the only commodity of any importance that is sold on a gross weight basis and this is sold only in America on this basis. Cottons in other countries and even American cotton sold to foreign countries are sold on net weight basis. Gross weight marketing results in wide variations and rules for the selling of cotton.

Courtesy, The Cotton-Textile Institute

A striking contrast between the appearance of jute- and cotton-wrapped bales is shown here . . . . . .

We quote from a preliminary report gotten out by the United States Department of Agriculture, Bureau of Economics, February, 1925. This statement was made by E. A. Beveridge, cotton specialist, employed by the department at that time:

All through the system of handling and marketing American cotton runs the incentive to add to the weight of the tare,

as far as the rules will permit in the market to which the bale is going. The bale usually comes from the gin with a little over 4 per cent tare on it. When the shipper gets it, he adds sufficient additional tare to bring the total up to about 5¼ per cent, let us say, in the export market. The foreign importer, not to be outdone, tacks on some more tare before delivery to the spinner, the tare finally amounting to perhaps 6 per cent, so that, roughly speaking, there has been added to the bale about 2 per cent during the journey from the farmer to the spinner. The consequent economic loss, measured by the amount of unnecessary bagging, and ties, and the freight, insurance, and other charges paid thereon, has to be borne jointly by the farmer and the consumer.

Sometimes the farmer, feeling that he, himself, is entitled to some of this leeway between these two extreme tares, puts more than the customary tare on his gin bale. But he seldom gains by this, for it is only by an oversight that the buyer permits the overtare to pass.

The whole matter resolves itself into this, that each buyer always adjusts his prices in accordance with the amount of tare for which he expects to pay.

The tare situation is very complex and it is not simplified by the rules of the exchanges themselves, but rather it is aggravated by them because of their different tare allowances. For instance, a bale from a market where a 20-pound tare rule obtains may be shipped to one of many domestic or export markets where the tare limits may be anywhere from 24 to 27 or 28 pounds, and the difference in tare will be added when the bale is compressed, even though it may not be required.

Courtesy, U. S. Dept. of Agriculture

Commercial shipment of jute-covered cotton bales discharged at Bremen, Germany at same time as cotton-covered bales on opposite page . . . . . .

In some cases the State laws render the situation still more complex. For example, in South Carolina, it is legal for a farmer to put 6 per cent tare on his gin bale, or, say, 30 pounds, knowing that the law prohibits the buyer from deducting for or cutting off the excess tare. Yet a cotton mill in the same state may demand that the shipper have no more than 22 pounds of tare on the same bale. In such a case the shipper merely offers a price to the farmer that will take care of the claim he will get for the 8 pounds excess tare and the freight and other charges on this difference in weight.

The wide variance of the laws on tare in the various cotton states has already been mentioned. For ready reference, a synopsis of them is herewith given:

Alabama: (1) All public ginners are licensed by the state; (2) State Board of Agriculture through powers vested in it by the law has decreed tare must be between 18 and 21 pounds per bale, and not less than 6 yards of sound bagging (New or second-hand, free of all sample holes, rent or cuts) and 6 good ties, each 1½ pounds shall be used on each ginned bale. (Act of Sept. 27, 1923) General Acts, Alabama, 1923, Page 483, Art. 31.)

Arizona: No laws found.

Arkansas: Bales shall be wrapped with sound standard bagging not to exceed 7 yards per bale. It appears that all ginners are licensed. (Section 6 of Act. No. 67 of Acts of 1919; now section 10446 Chapter 182 of 1921 Digest).

California: Cotton shall be sold on true net weight. (Codes and General Laws, Act 4385, Section 32-A, Page 1980.)

Florida: No laws found.

Georgia: One Statute (Parks Anotated Code, 1914. Vol. 1, Title 13, Chap. 3, Art. 1.) states that a deduction from gross weight may be mutually agreed on, but it shall not be more than 24 pounds if the bale is covered with jute bagging. Another (Sec. 558a, Parks Code.) makes it illegal for any person owning or controlling a compress to cut off any bagging from a bale in his custody without the owner's consent. Still another makes it unlawful to deduct any sum for bagging and ties when their weight does not exceed 6 per cent. Only the excess over 6 per cent may be deducted. (Sec. 558b, Idem.)

Louisiana: No laws found.

Mississippi: No laws found.

North Carolina: The law says nothing regarding tare but provides that deductions for dirt, water, or any other just cause may be made. (Consolidated Statutes 1919, Sec. 5085, Page 123.)

Oklahoma: The State Corporation Commission is charged with the duty of controlling gins but so far does not appear to have made any regulations covering weight or tare. (Compiled Oklahoma Statutes, 1921, Vol. 1, Section 2201, Page 1106.)

South Carolina: No tare to be deducted except actual weight of bagging and ties. When buyer and seller agree to deduct tare, it shall be 24 lbs. for bales covered with 7 yards of standard jute bagging and 6 iron ties. When they agree to sell at net weight, the actual tare shall be fixed as above. Another statute makes it unlawful to deduct any sum for bagging and ties when the weight of the latter does not exceed 6 per cent. Only the excess over 6 per cent may be deducted. (Civ. 1912, Page 2331; Civ. '02, page 1543; G. S. 1195; R. S. 1303; 1846, XI, 368; 1878, XVI, 713; 1889, XX, 375; Crim. Code, '12, Page 461; 1910, XXVI, 612.)

Tennessee: The weight agreed upon to be deducted for bagging and ties shall not exceed their actual weight. (Thomson's Shannon's Code 1918, Chap. 18, Sec. 3490, Page 1401.)

Texas: Ginners must stamp the amount of tare on the bale; compresses must replace this mark if during compression it is obliterated.

It is illegal to deduct in price or weight any amount for tare greater than is shown by the figures stamped by the ginner. (Penal Code, Chap. 7a, title 14, page 162; Also Civil Statutes.)

DALLAS COTTON EXCHANGE

Total gin tare not to exceed 22 lbs. with one layer of sound bagging and no spliced ties (General Rule 6); compressed and patched cotton, 7 iron bands required, 8 permissible; not over 8 pounds of patches to the bale (Spot Rule 1).

GALVESTON COTTON EXCHANGE

Rule 16: Bagging not to exceed 13½ pounds and ties not to exceed 6, on a flat bale. In case of standard compressed cotton, 7 ties necessary, 8 allowed. In the case of high density 8 ties shall be necessary.

Rule 18: 5 pounds of patches on standard compressed cotton; 8 pounds of patches on high density compressed cotton.

You will notice that the tare rule of Dallas and Galveston, Texas, have different tare allowances. You will also note that their tare rules absolutely bear out my statement as to the amount of tare allowed the farmer, which is 21 to 22 lbs. and the extra to the exporter of 7 and 8 pounds, which makes a total tare allowance to the exporter of 30 pounds per bale.

New ORLEANS COTTON EXCHANGE

Ties: 6 ties, weight 9 pounds, considered sufficient for

flat bale. 8 ties, weight 9 pounds, considered sufficient for standard compressed bale. 9 ties, weight 9 pounds, considered sufficient for high density compressed bale.

Bagging: 13½ pounds of bagging, considered sufficient for flat bale; 3-9/16 per cent of bagging considered sufficient for compressed bale.

NEW YORK COTTON EXCHANGE

6 bands on flat cotton and a reasonable number on compressed cotton, not to exceed 10 pounds, are permissible. Total tare not to exceed 25 pounds. All non-essential bagging to be removed or allowed for.

NORFOLK AND PORTSMOUTH COTTON EXCHANGE

Flat bales: 6 yards sound bagging and 6 ties considered sufficient, total not to exceed 22 pounds; the 6 ties not to exceed 9 pounds.

Compressed bales: 26 pounds maximum tare allowed. Side pieces are deductible, as also is all bagging not essential to cover and protect the cotton.

OKLAHOMA STATE COTTON EXCHANGE

6 bands necessary, not to exceed 9 pounds; total tare not to exceed 22 pounds.

SAN ANTONIO COTTON EXCHANGE

6 bands, not to exceed 12 pounds, are sufficient.

SAVANNAH COTTON EXCHANGE

Rule 56: Flat bale shall have 6 ties, not to exceed 9 lbs.; Standard compressed bale to have 8 ties, not to exceed 9 lbs.; high density compressed bale shall have 9 ties not to exceed 9 lbs. Bagging must not be doubled and must not exceed 15¾ lbs.

SOUTHERN MILL RULES

Maximum tare permissible on a flat bale, 4.4 per cent. Maximum tare permissible on a compressed bale, 4.8 per cent.

Courtesy, U. S. Dept. of Agriculture

Experimental shipment of cotton bales covered with cotton and jute bagging in the dock at Bremen, Germany . . . .

EFFORTS TO REGULATE TARE BY RULES

After cotton has passed from the hands of the farmer, practically every sale is made subject to the terms of some cotton exchange, or cotton association, whose rules are made by reference a part of the contract of sale. There is a great diversity of ideas regarding tare in the various exchanges. Unfortunately, it is impossible to quote fully all of the tare rules of the prominent exchanges.

C. I. F. AND 6 PER CENT CONTRACTS.

Practically all export shipments are sold under what are known as c. i. f. and 6 per cent contracts, either under the Liverpool, Havre, or Bremen rules. The detailed terms in these contracts are almost identical. In each the maximum limits for tare are 900 lbs. per hundred bales for ties, and for bagging, they are 3-9/16 per cent of the gross weight, less the weight of the ties.

They are also identical in that the weight paid for is the "American actual gross weight, less an allowance of 6 per cent." This is the actual wording of the Liverpool contract, which should be noted carefully, as it does not read "Actual net weight"; nor does it read "Less a tare weight allowance of 6 per cent." In other words, the present c. i. f. and 6 per cent contract is not a "True net weight contract." It might be called a 6 per cent gross weight contract.

GROSS WEIGHTS VS. NET WEIGHTS.

One of the reasons for the continual addition of tare to the American bale is the fact that American cotton is sold on: "Gross weights" and not on "True net weights", which is the more scientific basis of selling and is the basis of selling all foreign growths, even when these are sold in this country.

If American cotton was sold on "True net weights", there would be no incentive to add to the tare; rather would it be the other way, although it is hardly likely that any one would knowingly expose his bale to weather, or other risks, through insufficient covers. In any case, a standard tare is advisable whether cotton is sold on gross or net weights.

If American cotton was sold everywhere on a true net weight basis, then the price would give the value of the cotton per se, and correct comparisons would be possible that are not possible now. (For example, when cotton is quoted here at 20c, that is really the price of cotton and tare together, the true price of cotton would be 20c plus, about 5 per cent, or, say, 21c.)

Such a method would indicate the true value of cotton itself, would tend to do away with a great deal of juggling of tare, and would dispense with rather complicated methods of price transformations.

There is reason to believe that cotton exchanges abroad would be glad to buy American cotton, as they do other cotton, on a true net weight basis, if the tare on our cotton was standardized.

Thus the intelligent reader can see the awful chaos of conflicting rules and regulations that the cotton buyer must consider when he is buying cotton gross weight. The only safe position that he can assume is that he may resell his purchase in the most undesirable and unfavorable place indicated by these rules. If this is true, then, is it not reasonable to suppose that the daily quotations of cotton, which we admit are influenced by the speculative element, are fundamentally influenced by tare allowances and deductions that may or may not be considered in the resale in these various markets?

Common sense indicates that selling cotton on gross weight basis is compelled to penalize the farmer even though he is led to believe that he is not penalized because he sells his bagging at a slight increase over costs.

Another point is evidenced by the fact that normally the Liverpool market is higher than the American market by approximately five per cent, according to Mr. Beveridge. This condition is attributed to the fact that Liverpool quotations are on a net weight basis while American quotations are depressed by the gross weight basis.

It is true that occasionally conditions will be reversed, due to the speculative element, but theoretically if the same speculative pressure were placed on the Liverpool market and the American market at the same time, the Liverpool market would be the higher.

Now to recapitulate with a theoretical example, under present conditions Middling ⅞-inch cotton on July 28th, is selling at 6.40c per pound, a five hundred pound bale of cotton would bring the farmer thirty-two dollars. Suppose the bagging and ties cost $1.00. The 21 lbs. of bagging and ties would bring to the farmer $1.34, or he would make a net profit on his bagging and ties of 34 cents.

This is the real and only reason that the farmer has for using jute.

For purpose of clarification, let us use some actual figures to illustrate what we mean by selling cotton on a net weight basis and on a gross weight basis, then let us use another system showing the influence of the tariff.

Jute bagging is selling at 8 cents per yard, or 48 cents per pattern; cotton bagging is selling at 10 cents per yard or 60 cents per pattern. Ties are the same in each case.

Gross weight.

1 b/c 521 lbs. @ 6.40c	=	$33.34
Less 6 yds. jute bagging	=	.48
Net		$32.86

Net weight.

The 6.40c per lb. would be advance 5% of 6.40 or 32 pts. = 6.72.

1 b/c 500 lbs. net @ 6.72c	=	$33.60
Less 6 yds. jute bagging	=	.48
Net		$33.12

With adequate tariff and net weight.

1 b/c 500 lbs. net @ 7.72c	=	$38.60
Less 6 yds. cotton bagging	=	.60
Net		$38.00

$33.12 minus $32.86 equals 26c
$38.00 minus 32.86 equals $5.14

From these figures it is easy to see that the $32.86 received for cotton on a gross weight basis lacks 26 cents of reaching the price received on a net weight basis.

Also cotton reacting under the influence of an adequate tariff on jute and net weight and covered with cotton bagging nets the farmer $38.00 per bale instead of $32.86. This difference amounts to $5.14 per bale.

If anyone thinks that these figures are tricky and used only for illustrative purposes, he can make his own calculations.

Does an extra $5.14 mean anything to the farmer? This difference is figured on low priced cotton. If and as cotton advances this difference becomes larger.

Tradition is the hardest element in human life to break. Farmers and tradesmen are the most conservative people in the world. The fact that cotton has been wrapped in jute for a century has no argument. Sail boats were used for centuries. Hand spinning and weaving have been used for thousands of years. Candles and torches have been used for lighting since darkness was on the deep. Length of service of any utility is a sign only of lack of progress.

Progress demands change. Changing markets and changing political and economic conditions demand change. The mills are willing to buy cotton wrapped in cotton.

The United States Department of Agriculture in an unbiased study made some time ago, relative to cotton bagging, indicated the following:

1. Cotton bagging may be manufactured from the lowest grades and staple lengths of cotton produced in the United States, and can be manufactured from high grade waste.
2. Cotton bagging as manufactured at present, makes a very suitable covering for cotton bales.
3. Decided economies in transportation and insurance cost would result from the use of a lighter weight bagging.
4. A strong, light weight cotton bagging of standard construction and weight would tend to obviate the disagreeable and costly practice of challenging and carrying American cotton in spinners' markets at home and abroad.
5. Cotton lint does not adhere to cotton bagging so tenaciously as it does to jute bagging.
6. The lightest weight of cotton bagging thus far tested is superior to 2 lb. jute bagging and to the burlap covering commonly used on the Egyptian bale, which has the reputation of being the most attractive covering now entering the world's market.
7. The use of cotton bagging for cotton appears to depend upon the following:
   (a) The manufacture of a light weight bagging which can be sold in competition with jute bagging.
   (b) The sale of cotton on the basis of its net weight in the markets of the world, including the local markets, to obviate the losses which would result from the use of light weight bagging when settlements are made on the basis of gross weights.

There is considerable demand among spinners and merchants and the trade generally for a neater package for practically every line of merchandise. In fact, it is considered that neatness of package has a definitely beneficial effect upon sales. For years the American cotton bale has been criticised for its ragged appearance upon arrival in foreign markets. Not only are buyers prejudiced by its ragged appearance, but great economic losses are incurred because of the inadequate covering of the American bale.

It may seem that in discussing an adequate tariff on jute and jute products and the marketing of cotton on net weight basis, two separate questions are involved. This is true, but it is also true that jute bagging is the great influential factor in determining the attitude that the farmer assumes in thinking of these questions.

An adequate tariff on jute products and selling cotton on a net weight basis will surely be advantageous to southern farmers, because in its finality it means greatly increasing the use of American cotton, and that is the most evident fact in the needs of the South today.

Aberfoyle Adds Novelty Yarns.

Meeting a widespread and growing demand for novelty yarns and fiber mixtures, the Aberfoyle Mfg. Company have announced a range of novelties including crepe yarns, boucles, and softly twisted versions in all-durene, durene-and-rayon and durene-and-wool combinations. Seven distinct types are being offered and among these are many variations. The company states, "The trade has indicated a strong desire for novelty yarns and mixtures, and an enthusiastic reception is promised these new developments. They offer an entirely new field for durene fabric constructions, since, by varying their weights, it will be possible to produce all classes of fabric from sheers to soft woolly-textured cottons. In addition to technical and fiber variety, the new Aberfoyle yarns are presented in a broad range of colors and shades including monotones, two-tone and multi-color combinations."

Helpful CHEMISTRY for Use in Wet Finishing

Article 2

THE previous section of this article, published in December, gave an elementary description of the major classes of chemicals used in wet finishing. The present installment continues the discussion by listing simple, practical tests of analysis for the chemicals and compounds used in dyeing, bleaching and finishing. Clippings of the previous installment will be furnished on request. . .

By Andrew J. Kelly
Burkart-Schier Chemical Co.

BESIDES the more comprehensive and arduous methods of analysis for the chemicals and compounds used in dyeing, bleaching and finishing, there are many simple tests that can be of considerable value to the practicing dyer in his daily routine. For instance, the presence of any material quantity of combined ammonia in a soap or sulphonated oil can easily be determined by warming the sample with excess caustic soda solution. The soda will displace the ammonia which will give its characteristic odor. (This simple test can also be applied to ammonium salts.) If there is no ammonia present, it is fairly safe to assume a soda finish, as potash soaps are becoming uncommon and potash oils are rare.

However, if it is desirable to test for potash, there is the following qualitative method, suggested by Levitt: "Incinerate 1 gram soap, leach the ash with 10 cc water, neutralize with acetic or hydrochloric acid and add a 10 per cent solution of sodium cobaltinitrite. A yellow precipitate on slight warming indicates potash." There is also the flame test, potassium giving a violet color, which, however, is readily obscured by sodium.

Carbonates, such as soda ash and bicarbonate, w ll reveal themselves by their effervescence in the presence of acid; adding dilute sulphuric acid to a solution of the sample will generate carbon dioxide, which causes the "bubbling", if there be carbonate present.

A simple test for silicate of soda is performed by adding fairly concentrated H_2SO_4 directly to a portion of the sample (if a liquid) or to a concentrated solution of it. Presence of silicate in appreciable quantities will be indicated by the separation of gelatinous silicic acid (which is converted to silica on drying). Of this "silica gel" it has been said that one cubic inch, due to extreme porosity, has a surface equal to an acre. The action of acid on silicate points a moral: to use care in adding any acid to a boil-off or other bath containing silicate, so as to avoid forming this hard-to-remove silicon compound directly on the fibers of the goods being processed.

Most of the tests for fatty matter are based on the fact that dilute acid will break down the solution of a soap or oil, setting free the fatty acids. The so-called "mill test" consists of adding acid to a measured quantity of oil in a graduated cylinder, agitating well, and allowing the liberated fats to rise and form an upper layer which is read off directly; ml fat divided by ml sample times 100 equals per cent fatty matter. This is similar to the Babcock test for determining the butterfat content of milk or cream and in fact the use of Babcock or sulphonation bottle will facilitate results. It permits better agitation of the acid and oil, assuring quicker separations and more accurate results. Addition of common salt solution will raise the fatty matter into the graduated column for a reading. Of course, a carefully handled ether extraction will render more positive results, but the above test is good for rapid comparative analyses. Sulphuric acid is handy to use because it is odorless and it is often possible to draw helpful conclusions from the odor of the freed fatty matter. Too concentrated acid is to be avoided, to prevent charring or other action on the fat, thereby increasing the probable percentage of error.

Home-Made Camera for Simple Microphotographs . . . . .

Concentrated H_2SO_4 can sometimes be used to check the presence of chlorides or nitrates in chemicals; added to common salt it forms muriatic (hydrochloric) acid with characteristic odor; added to sodium nitrate nitric acid is formed—in either case sodium sulphate (glauber salt) is the other reaction product.

The odor of caramel upon charring a bit of the sample indicates glucose, dextrine, or related hydrocarbons. Starch in cloth may be determined qualitatively by the use of a solution of iodine in potassium iodide. This reagent may be spotted on the fabric or the fabric may be extracted in hot water and the resultant extract treated with the iodine solution. In either case the presence of starch will be shown by a deep blue coloration. This test is exceedingly fine. Since starch is converted to dextrine by heating—or "roasting", as the process of dextrination is called—there is quite probably some dextrine formed

when cloth is dried on high temperature rolls or calenders. Dextrine gives a brownish red coloration with iodine and this fact may have some effect on the intensity of the blue color.

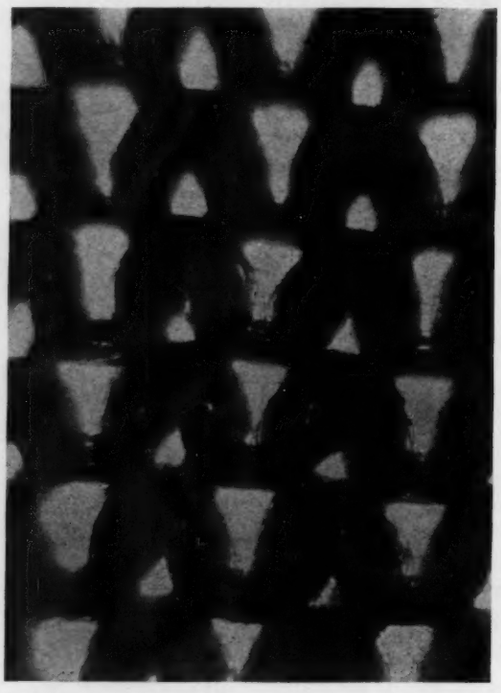
Presence of iron in water, or on cloth, is discovered by treatment with potassium ferrocyanide (yellow prussiate of potash)—if iron is present there is a blue coloration or intense blue precipitate (which is Prussian Blue). This is another highly sensitive reaction, and it is handy for checking spots on bleached goods where iron stains are often encountered. Care must be exercised in handling potassium ferrocyanide, as it is not only poisonous in itself, but will form poisonous gas in solution with acids.

Other Tests for Soaps and Oils.

Besides those already mentioned, there are several other simple tests for soaps and oils that may prove to be of some aid. Drying a weighed sample to constant weight at 220 deg. F. will determine the non-volatile matter:

$$\frac{\text{weight of dried sample}}{\text{weight of original sample}} \times 100 = \%\ \text{NVM}$$

In the absence of other volatiles, 100 less the % NVM equals the moisture. A simple and inexpensive electric hot plate will do nicely for drying the sample provided care is taken to avoid overheating and consequent charring. And even at 220 deg. F. some oils will show a tendency to spatter in which event it will be necessary to keep the sample slightly agitated during the early stages of drying, to prevent loss. Soaps show a greater tendency to hold on to their moisture than do the sulphonated oils and generally require a longer period of heating.



Micro-photograph taken with home-made camera. Knitted fabric seen by transmitted light . . . . . .

One of the trade papers recently listed this qualitative test for colophony (rosin) in soaps: "The sample is dissolved in alcohol, a little hydrochloric acid and a few drops of a solution of potassium ferricyanide (red prussiate of potash) added. The mixture is boiled for a short time, cooled and treated with a few drops of aqueous ferric chloride. A blue color indicates colophony."

Free alkali, as well as free fatty acid, is estimated by titration with N/2 Sulphuric Acid, using phenolpthalein as indicator. To determine alkali bound as soap, titration with methyl orange solution is indicated. These methods may be found in any list of methods of analysis for soaps and sulphonated oils.

The American Association of Textile Chemists and Colorists has appointed a committee to consider standard methods of analysis of sulphonated oils, the Bureau of Standards in co-operation with manufacturers is working toward the same end, and there should be no dearth of methods for those who wish to carry out a complete chemical analysis. These workers are all aiming at simplification of procedure making for greater uniformity of results, and tentative drafts of the suggested standard methods indicate that they will require a minimum of technical knowledge for operation.

Tests for Specialty Oils and Agents.

Thus we see that the literature provides fairly complete data for a scheme of analysis of the straight soaps and sulphonated oils. Not so, however, for the commonly used specialty or compounded oils and other agents—of these there is too great variety and complexity. For the solvent oils, the simple distillation of a weighed or measured quantity of the sample is a valuable first step. Careful observation is made of boiling points and the odor or odors of the distillate noted.

Familiarity with the solvents generally used is of course a tremendous help but in either case a table of their physical and chemical properties is necessary, to check against the observed data. The distillate is collected in a graduated cylinder and the solvents and water allowed to separate after which the amount of each may be read off directly.

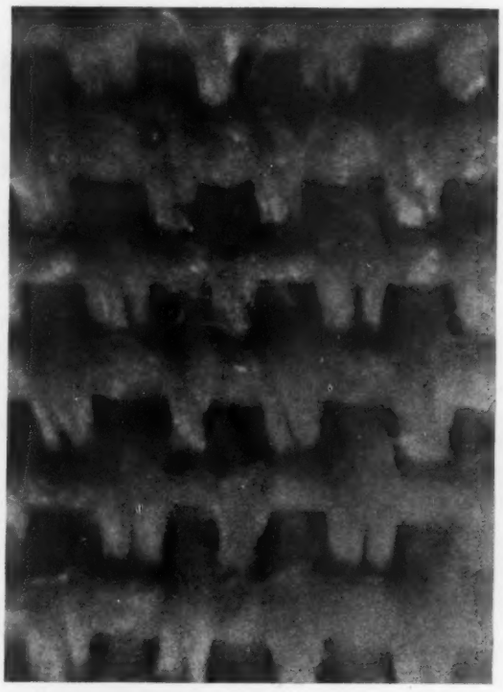
In the case of solvents miscible with water, such as alcohol or acetone, the specific gravity of the distillate is taken and reference is then made to a table of the water solutions of the solvents, as found in any chemical handbook. Incidentally, one of these handbooks, such as Van Nostrand's or the Chemical Rubber Company's is absolutely essential in even the most simple or elementary dyehouse or mill laboratory.

In case of foaming during distillation, dry granulated salt may be added to the distilling flask. This procedure is applicable when solvents such as acetone, alcohol, carbon tetrachloride, ethylene dichloride, propylene dichloride, and trichlorethylene are present in the compound.

In the case of cresol penetrants and scouring agents the cresol content may be estimated as follows: 10 grams of the sample is evaporated to dryness three times with 50 ml portions of water. This drives off the cresol, and the volume of fatty matter in the residue is determined by an acid separation, or "mill test." Another portion of the sample is

given the acid separation directly, the fatty matter and cresol combined will collect in the upper layer.

The percentage of cresol (by volume) may be estimated by deducting the former from the latter. The percentage of cresol by weight is obtained by multiplying by the factor 1.04. This test is handy as a means of comparison against a known standard or familiar compound; if the same procedure is followed for each determination results will check fairly closely. It is, however, quite true that there is yet no simple scheme of analysis for examining the general run of the modern textile penetrants and wetting agents—they are as yet too new and too much in the development stage for this to be possible. For a valuable and remarkably complete listing of analytical methods for the dyer and finisher reference should be made to a recent article by Walter M. Scott entitled "Analytical Methods for a Textile Laboratory."*



Micro-photograph taken with home-made camera. Woven broadcloth seen by reflected light . . . . . .

Concerning the storage and handling of heavy chemicals, where exceptionally corrosive material is to be handled it is always well to consult the manufacturers for specific data. Nevertheless, some general suggestions can be offered. For storing concentrated sulphuric acid (specific gravity over 1.800) cast iron containers are suitable. For the dilute acid stoneware and glass is recommended. For acetic acid use wood or glass. Solutions of the alkalies are, in general, best stored in iron or steel containers. A steel drum with the head cutout makes an excellent reservoir for solutions of caustic and other alkalies. Aluminum, brass and copper should be avoided for alkaline solutions, as should galvanized or aluminum painted equipment, provided of course that the zinc or aluminum is on the inside of the vessel.

Storing and Handling Heavy Chemicals.

Valuable corrosion data concerning solutions of metallic salts can be obtained by consulting the Electromotive Force Series of Metals (found in most chemical handbooks). Any metal in the series will replace any metal below it. For instance, copper is below iron and hence if copper sulphate (or other copper salt) solution were stored in an iron tank then iron sulphate and free copper would result.

Most of the salts used in wet processing are best not stored (in solution form, that is) in iron or steel vessels, wood or stoneware being advisable. For hydrogen peroxide avoid iron, copper and brass—use glass, stoneware, lead or Monel metal. Interesting and informative data concerning the use of Monel metal equipment for dyeing, bleaching and stripping is contained in an article by F. L. La Que, of the International Nickel Company, presented before the American Association of Textile Colorists and Chemists.** A thin coating of petrolatum, melted and applied with a paint brush, provides for idle metal equipment or instruments efficient protection against the corrosive action of the atmosphere.

No doubt some part of the data offered in this paper will seem elementary to many readers. It is but natural that this should be, for it has been the purpose here to present only such matter as may be considered to properly relate to the simple chemistry of dyeing and finishing. An attempt has been made to avoid unnecessary technicalities. No scheme of complete quantitative analysis has been suggested—for this, reference must be made to the literature of standard chemistry and analysis. Often, however, there is not the time, equipment or the necessity for exhaustive analytical work; data readily obtained and generally informative may be the object. In such cases some of the simple tests mentioned herein should be of value. Probably every reader has himself certain "tricks of the trade", short cuts to practical knowledge. To help spread perhaps a few of these has been the purpose of this discussion.

*Am. Dyestuff Rep. July 18, 1932, *et seq.*

**"The Use of Monel Metal Equipment for Dyeing with Developed Colors, Stripping and Bleaching." Am. Dyestuff Rep. Apr. 25, 1932.

New Equipment for N. C. State Textile School.

The Textile School of North Carolina State College, Raleigh, N. C., have recently installed in the throwing room a doubler-twister made by Fletcher Works, Philadelphia, Pa. This machine is being used by textile students to prepare yarns for rayon crepes and other fabrics which require doubled or hard-twisted yarns. Other new equipment in the throwing room includes the latest type of wire swifts for winding rayon and cotton yarns, manufactured by the Atwood Machine Company, Stonington, Conn.

The school recently installed in the knitting department a Merrow motor driven sewing machine of the latest type, complete with welting attachment and welt folder for golf hose. Additional parts have also been supplied with this machine to make it adjustable for welting ladies' hose and various classes of work. Other new equipment in the knitting department consists of "Fairy Forms" for exhibiting ladies' hose and men's half-hose. These forms are made by the Shoe Form Company, Auburn, N. Y.

PURE SEED; GINNING and PACKING of Cotton

By R. A. Butler

Technical Superintendent,
Martha Mills, Thomaston, Ga.

AS a mill man you are familiar with the many advantages of selecting cotton which has been grown from pure seed, which has been properly ginned and packed in such a manner that it can be easily handled and delivered. There is much work yet to be done in improving existing conditions, and you are urged to read this discussion of these vital factors pertaining to your raw material, and to do your part in stimulating interest in the subject on the part of growers, ginners and others involved.—The Editor.

Pure Seed.

THE nature of the common varieties of American cotton is that a staple length will be obtained the equivalent of the seed planted. This, however, depends largely upon the care exercised in selecting the seed. Repeated planting year after year of "run of the gin seed" even on well fertilized land will soon deteriorate the length and character of the staple. Considerable educational work has already been done among the cotton planters to stress the importance of proper seed selection.

Recognizing that poor seed results in deteriorated length and character of staple, it may be well to present more tangible evidence of the results in processing and on the finished product. The term "character" as applied to cotton embodies the four characteristics of:

1. Variation in the length of the fibers as indicated by the readiness with which they block off when stapling.
2. The "spirality" of the fibers as shown by the extent of their resistance to separation, also called "clingability".
3. The "diameter" of the fibers as determined by the feel whether harsh or soft.
4. The "strength" of the fibers as indicated by the effort required to break a bundle.

A depreciation in one or more of those characteristics results in a loss to the spinning mill in three distinct ways:

1. Depreciated character necessitates the purchase of cotton longer in average staple length than would otherwise be necessary to produce a yarn of required strength.
2. It is necessary to remove a larger percentage of waste in the form of short fibers to maintain the predetermined strength.
3. The cost of processing is appreciably increased.

To elaborate briefly on each of these points, actual tests conducted under my supervision show that in some cases yarn manufactured from cotton carefully selected for character shows equally as good tensile strength results as material processed from cotton considered as average receipts against a staple 1/16-inch longer. If these results can be consistently duplicated, and it is entirely within reason to believe that they can, the annual saving to the mills will be enormous.

As an illustration, based on the conservative differential of $2.50 per bale in the price of cotton 1/16-inch shorter in staple length, the savings per year to a mill using 20,000 bales would be $50,000.

The answer to the question, why is the strength of yarn so greatly increased with good charactered cotton, is not difficult to understand when it is realized that the variation in weight from inch to inch in an average 15s yarn spun from 1 1/16-inch Middling cotton is 40 per cent and may vary as high as 60 per cent in one poorly processed from inferior cotton. The good charactered cotton with its greater uniformity of fiber lengths, increased ability of the fibers to cling together with a minimum of twist, and the inherent strength of the fibers, all contribute to a more uniform and stronger yarn.

The second point that it is necessary to remove a larger percentage of waste in the form of the shorter fibers to maintain the yarn is obvious. Not only must a large part of the increased percentage of short fibers be removed but also an additional quantity to compensate for such other deficiencies as fiber strength which cannot be corrected in processing. The loss to the mill is two-fold: First, the actual difference in the value of the waste and the value of the stock processed to the point of its removal as waste; second, the cost of handling the additional waste.

The third point is that the cost of processing is apparently increased. This refers in particular to the

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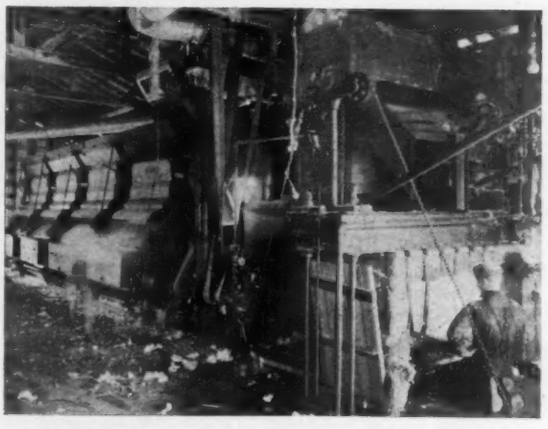
Presented at a recent conference of the cotton committee of the Cotton Manufacturers Association of Georgia at Thomaston, Ga.

increased end breakage and the consequent machine stoppage to repair breaks. Here again the waste feature enters into the picture. Every end that breaks means that much material which must go back to the pickers to be re-processed. At each subsequent process end breakage becomes more costly, since a further expenditure has been made for processing, and after the spinning operation re-processing is impracticable. It is not an exaggerated statement to say that the difference between a "good" and a "poor" running mill may easily mean the difference between a profit or a loss at the end of the year.

Effect of Ginning.

The ginner is the middle man between the cotton producer and the manufacturer, though not in the commonly accepted sense of one who reaps a profit without rendering a worthwhile service. Within the past few years operating executives, cotton purchasers, and technical research men have awakened to the importance of the ginning function. It is now regarded more in the light of a manufacturing process rather than a producing function. Some mills situated in the cotton belt and using local cotton, have even gone so far as to install their own gins.



Ginning and packing have a great deal to do with the processing of the cotton at the mill

Various authorities have estimated that proper ginning can raise the value of trashy cotton from 5 to 20 per cent. Using as an illustration an average 14,000,000 bale crop selling at 12 cents per pound the total increased value of the crop based on a conservative improvement of 10 per cent would amount to $84,000,000. It is also a recognized fact that the present day commercial ginning with the necessity of speed for the sake of economy is not as good as when each plantation owned its own gin. Under the latter circumstance the cotton could be stored if necessary until the atmospheric conditions were favorable. The ginner familiar with one staple which was usually raised year after year, could profit by his past experience with that particular staple.

Ginning defects consist of tangled and matted fibers, excessive foreign matter, presence of motes, neps and fuzz. The staple is frequently decreased as much as one-eighth of an inch by improper ginning. All that has been stated in regard to the loss to the spinning mill caused by using cotton of deficient character, applies equally as well to that which has been defectively ginned. In addition, many of the tangled and matted fibers are ruptured in the preparatory processes, resulting in a further increase in the waste percentage. The gin neps are very difficult to remove even when combing is resorted to, consequently, the appearance of the finished cloth is injured.

Fortunately, Congress recognized the necessity for ginning investigation and in 1930 passed an Act whereby funds were available for this work. The first tests were started at the new laboratory in Stoneville, Mississippi, on January 14, 1931. While a large number of tests have already been conducted, these have dealt principally with the preparation of the cotton prior to ginning. The indications are, however, as reported by Mr. Charles A. Bennett, Associate Mechanical Engineer, Bureau of Agricultural Engineering, that pre-cleaning and drying combined with a moderate gin speed gives the best results. The Bureau is encouraging the introduction and use of driers wherever there seems to be opportunity for real service.

Since this work is still in the experimental stage, there is little that can be done except to manifest a real interest, thus assisting to prevent the development of any situation which would impede the progress of the work, such as a program of governmental economy.

The familiar sight of a trucker struggling to push his truck loaded with a bale of cotton whose bagging is effectively blocking the wheels; or a large sample hole in the side of another bale from which cotton is protruding in all directions, or a third bale with several ties missing from one end and the released cotton spreading out like a worn out broom, brings to our minds very forcibly the need for an improvement in the method of sampling and packing cotton.

Possibly the answer will be found in improving the present method through an educational program. It may be necessary to change the type of covering used on the bales, or possibly a complete change in the type of the package will effect the desired improvement. The satisfactory solution to this problem can be arrived at only through trial. It is certain that the average bale presents an unsightly appearance, has an excessive amount of tare which increases shipping cost, does not protect all parts of the bale from damage, and distributes jute fibers on the outside layers, which are especially troublesome in processing.

Clemson Installs New Humidifying and Recording Equipment.

The Textile Department of Clemson College, Clemson College, S. C., have installed a Foxboro recorder and controller for relative humidity. When this instrument is set for a desired relative humidity, such humidity is maintained within a very narrow range. An eight-day clock and recording chart provide a continuous record of the humidity conditions.

The proper amount of moisture in cotton is of importance not only in manufacturing but also in cotton grading. Accordingly a Southworth humidifying head has been installed in the Clemson cotton grading room. The Clemson textile department now has six different types or makes of humidifying equipment. Installation of the Foxboro and Southworth equipment was made through G. A. White & Company, of Charlotte.

No Help Wanted

Some forceful observations on hours of work, wages, etc., in the textile industry . . . .

By Walter C. Teagle,
President, Standard Oil Co.

THIS is a courageous, yet well-mannered criticism of conditions in textile manufacturing—made by an outstanding leader in another great basic industry. Its value is enhanced by the position of the author. Open-minded, progressive textile manufacturers will read it carefully, and they, and through them the industry, should profit by it. . . . . .

OCCUPYING quarters donated by a former tenant who took the campaign pledges of four years ago seriously, and built himself a skyscrapers, with furniture supplied by other good friend, and using only voluntary workers, the Share-the-Work Movement has now functioned for exactly two and a half months. Inasmuch as it has certain other unavoidable expenses to meet, and no income from any source, its balance sheet to date resembles that of a typical cotton textile company. Our first purchase was a bottle of carmine ink, and now we have one for each desk. We are like the speculator who started in Wall Street five years ago on a shoestring and now is using it to hold up his pants. If misery loves company, we should have an enjoyable session.

Your president will have to tell you whether I am here by invitation or on a dare. You know who always gets hurt in a street battle: perhaps your guest is the innocent bystander. The New York papers report that there is to be a "knock-down and drag-out fight" at this meeting. As I weigh seventeen stone on the hoof, you may have to borrow a tractor to drag me out if the fight materializes.

On the theory that those who carry glass flasks should not sit down on stone walls, my right to talk to you about long hours may be questioned. The petroleum industry is not yet simon pure in its industrial relations.

The American Petroleum Institute, putting emphasis on the "American", recently appealed to the industry to eliminate the seven-day week, which still survives in some scattered producing operations, and to reduce all its other operations to 40 hours or its equivalent wherever practicable, for the purpose of increasing the number of bread winners in this distressing—and let us hope—temporary dearth of employment. This recommendation gives force to public sentiment which now strongly condemns long hours. That practice is being ushered out of the petroleum industry without slow music or flowers. No one regrets its passing.

The severity of a national crisis must excuse my intrusion into your affairs. Some three months ago a meeting was called in Washington to see what business could do to dislodge the depression. The chief manifestation of hard times is the bread line, actual and potential. Therefore, the first step toward good times must be reduction in unemployment. Could business do anything to anticipate the normal re-absorption into industry of the ten million idle? Our committee was asked to try.

"Made" Work Lacks Permanency.

One way to this end is through "made" work. That has its place, but such artificial stimulation is only a little preferable to charity, or a dole. For, unfortunately, not much "made" work is afterwards self-sustaining. The resultant increase in taxes is a heavy drag on eventual stabilization of income and outgo. We hate to borrow money from our children and grandchildren for unneeded highways, little used bridges or tunnels, parks that will never be littered with lunch-baskets, or million-dollar post offices for thousand-dollar towns.

The only way to reduce idleness is to divide up such work as we have, the jobs that are still good, among more workers. This too, is a temporary expedient, but unlike public works, it is self-liquidating. As business improves it will squeeze out emergency work sharing as naturally as water or what-have-you poured into a jug displaces air. It will not leave any bond issues or other debts for the future to pay. It is so logical that several thousand employers initiated it of their own volition in the past three years without giving it a name or thinking that they were doing anything unusual.

As their volume fell off these employers grasped the right horn of a dilemma. Either they had to discharge part of their workers or prorate the remaining work among them all. The latter course meant that the surplus employees would not be thrown upon the community at a time when other jobs were not to be had; they would not rust out in idleness or become drifters. It is true that the employees took a proportionate loss in weekly earnings as a rule, although they got as much per hour as before. That was their contribution to the delayed settlement of the bills for the World War. Their employer and his salaried staff likewise made substantial contributions, he in the depreciation and loss of return on his capital, and they through salary cuts. With few exceptions, everyone in America has been an involuntary underwriter of the staggering losses of this depression in proportion to his means.

This frank discussion of employment conditions in the textile industry was delivered by Mr. Teagle at a meeting of the Board of Directors of the Cotton Textile Institute, in Spartanburg, S. C., in November. It is reproduced in full here in response to many requests.

Work sharing having proved its worth in this sporadic application, the Banking and Industrial Committees of our Federal Reserve banks decided to organize it and attempt to obtain its acceptance in all cases of any considerable amount of employment in time to help the nation through a difficult winter. The initial step was a study and definition of the possibilities. Out of that grew a recognition of its limitations. This is particularly important to the textile industry as you will soon discover. It was decided at the very outset that shorter hours and corresponding reduction in pay could not go hand in hand where the worker's income was too low to permit of inroads without causing his distress. The movement would become vicious if it carried workers down to a poverty level. Some concerns were already down where they could not broaden employment at the expense of the thin envelopes they were handing out from the paymaster's window. Other companies were running full time but paying substantially lower wages than in 1929. The latter group could share work and take on some of the unemployed, but there was not enough wages to go around.

As the depression advanced, it hit some kinds of business much harder than others. We practically stopped construction, for instance, with disastrous effect upon the demand for brick, lumber and steel, etc.; some leading companies in these industries now can employ a regular force only two or three days a week. Other industries, notably those supplying necessities that are consumed and must be immediately replaced, such as meats, food stuffs, petroleum and textiles, have suffered only a relatively small loss in demand. It is business of this latter class that possesses the greatest possibilities for work sharing. We have already made progress with the oil and the food people. We were hopeful of accomplishing at least as much when we started considering the textile trade.

The Problem in Textiles.

But here we find a situation not paralleled in any other industry. The volume of business is comparatively good, and unfilled orders insure its continuance at least as far ahead as the first of next year. Many plants are running rather full, a number of them on two shifts. Many of the mills are in districts hitherto dependent largely upon farming and we all know the status of the average small farmer. If he can make only 50 cents a day with his tobacco and cotton. he is apt to regard regular weekly mill wages, however small, as attractive, at least by comparison with the money he now may make tilling the soil. And yet, so keen is competition, that even these low labor costs have not permitted the average mill to earn a satisfactory return on the investment.

That raised the question of whether an employer should reject the Share-the-Work Movement solely on the ground that it might increase his labor charge. It is a serious question. Much of our business, everywhere, has been reporting deficits. Even where it has made deep wage cuts it has not been able to overtake diminishing net revenues. This demonstrates that wage cuts are often only a partial offset to lowered selling prices and loss of volume. Many corporations have learned that there are other and better ways of effecting necessary economies.

Our common objective is the restoration of good times. Wages make up by far the largest part of the people's spending power. Dividends, interest payments and rents have melted away like snow in the spring. As those who still receive salaries and wages gain confidence, and as the unemployed return to work, purchasing will expand. Where earnings permit employers to go beyond the point of spreading work within the limits of existing payrolls, and increase their wage payments for the same total amount of labor, they will stimulate business recovery. Are they warranted in doing that if they are not getting a fair return on their capital?

The expert accountant will answer no. He is looking at your costs in relation to the prices you receive for your output. I agree, if your competitor in another town persists in keeping his wages down. The wholesale buyer is not going to give more for your sheets, towels or print cloth than he has to pay for a competitor's of like quality because yours are the product of a mill that pays a living wage and which has shortened hours to make room for more workers.

Mr. Teagle's Warning.

"I VENTURE to predict that the textile industry will not be operating much longer as at present; on a basis which all too frequently requires that several members of one family must work to earn that family's livelihood; that involves longer hours than the public has come to regard as a fair day's work; or that employs women and minors on night shifts. Because those are matters that will not always be left to the decision of management. There is a third interested party that has the right of veto over policies inimical to the best interests of the public. It is the state. Do you wish to invoke exercise of that power?"

A Divided Interest.

This difference in your ranks is what our movement ran up against when it turned its hopeful eye upon the large field of employment represented by your industry. In round figures, it is estimated that you have 350,000 operatives working and at least 100,000 idle or on very short time. Those inside the gates have taken wage cuts since 1929 of 35 per cent or more. The workers are putting in long hours —at the present time certainly more than 48 hours a week in most cases,—and receiving, according to my information for this locality, from $5 to $16 a week. So far as the amount of work goes, your industry could easily absorb more than half its unemployed without increasing its output, by effecting only a moderate reduction in time worked per individual. How far you can go in that direction, spreading present wages as well as the time, without impoverishing the workers, is for you to decide. Ac-

(Continued on page 79.)

Cotton and Mill Problems Discussed at Spray Meeting

Reported by Robert W. Philip

THE different characteristics of cotton staple, and a few carding, spinning and weaving practical discussions, featured the meeting held at Spray, N. C., by the Northern North Carolina-Virginia Section of the Southern Textile Association, on Friday, December 2. The visitors were the guests of the Carolina Cotton and Woolen Mills Company, of Spray. The meeting consisted of two sessions, a morning meeting and an afternoon meeting, and a luncheon served in the Y. M. C. A., of the mills, where the meeting was held.

At a short business session, a new executive committee, to direct the affairs of the division, was selected. The members are: L. V. Andrews, superintendent, Martinsville (Va.) Cotton Mills, W. F. Humbert, master mechanic, Carolina Cotton and Woolen Mills, Spray, N. C.; N. W. Bales, superintendent, Thomas Mills, High Point, N. C.; D. F. Short, overseer weaving, Consolidated Textile Corporation, Lynchburg, Va.; J. V. McCombs, superintendent, Randolph Mills, Franklinville, N. C.; and E. B. Hoehl, Carolina Cotton and Woolen Mills, Spray, N. C.

The meeting at Spray was under the general supervision of Culver Batson, chairman of the division, who is manager of the Consolidated Textile Corporation at Lynchburg, Va. L. V. Andrews of Martinsville conducted the carding and spinning discussion, and Mr. Short of Lynchburg conducted the weaving discussion.

Talk on Cotton Characteristics.

The first feature of the morning session was a talk on "Essential Characteristics of Cotton in Relation to Different Fabrics", by W. D. Clark, Erlanger Cotton Mills, Lexington, N. C., who is cotton buyer for that plant and several other mills. Mr. Clark said in part:

"To begin with, what do we mean by the essential characteristics of cotton I would consider first the proper staple, second, the character or uniformity, and third, the grade of cotton. These three items are very important in regard to the cotton used.

"If cotton is picked when it is wet or ginned when it is green, we are likely to have gin-cut cotton, irregular fibers, etc., which are not desirable. On the other hand, if cotton is picked when it is dry and is properly ginned, we are likely to have a good grade of cotton and staple. I do not mean that ginning has everything to do with cotton, because a great many other things enter into it, but ginning is very important.

"As to staple, we have different kinds of soil, which produce different things; one seed planted on one kind of soil will not yield as good a staple as the same seed on a different soil. If you plant cotton in red land, and then plant the same kind of cotton on black land or sandy land, the yield will be different in strength of staple.

"The grade of the cotton is also affected by the kind of land, but not so much as the staple.

"To a mill a cotton man is almost invaluable in determining these various factors. He may not tell you whether it is grown on red, black or sandy land, but I do think that a cotton man can take a sample of cotton and by careful examination tell you whether or not the bale is of good staple and character.

"In this connection I would like to say that every mill should have some means of determining the grade and staple of their cotton. There are a lot of mills that are small and feel that they cannot have a cotton man because he is expensive; on the other hand, if a mill has a cotton man on whom they can depend, his services will be well worth the money spent. The larger mills have a cotton man who looks after the cotton. In the smaller mills the card room man or the superintendent usually examines the cotton. If a mill has a cotton man who is familiar with the different grades and staples of cotton, he is in a position to secure for them the desired cotton at a less price and it is all right for the overseer to check him.

"I do not think that it would be proper for me to tell you the kind of cotton to use in your individual plants, but I will tell you what I would use. If your mill is making sheetings, I would say that Middling or Strict Middling in grade with 15/16-inch staple is plenty good enough to be used. Why use Strict Middling instead of Middling unless you are selling a customer who is critical, and you have a reputation built up on a clean piece of material; your cleaning machinery may not be as good as some other mills' which have good cleaning machinery. Middling cotton is good enough and I would not recommend going lower. As to staple, 15/16-inch is plenty good for sheetings unless you have some particular order that requires a little better cotton.

"As far as print cloths are concerned, I would use Middling or better cotton with a good full inch to 1 1/16-inch cotton. Some mills use Strict Low Middling inch cotton, but the question is whether or not the price between Middling and Strict Low will be offset in the price you get for your goods. Any of you know that when you make a piece of print cloth out of Strict Low Middling cotton your cloth

will be specked, with probably considerably more neps than it would be out of Middling cotton.

"On the question of neps in cotton, I think that each one of you men have had your share of experience with neps. Neps are in all cotton, regardless of the grade; the higher the grade the fewer the neps. It has been my experience western cotton has more neps, on the other hand, western cotton has a higher breaking strength than cotton from the eastern belt of Alabama, Georgia, North Carolina, South Carolina, Virginia, and parts of Tennessee and some parts of Mississippi. Cotton west of the river has more neps. What causes them? It has been my experience that mills have had their share of trouble with neps, and I believe that if you will slow down your carding that is about the only way that I know of to get them down to a minimum.

"On denims, towels, where you have dyed cotton, I would say that you can begin to lower your grades. It has been my experience that cotton with light spots and tinges will bleach or dye light colors better than gray or blue cotton. If you are doing dark colors such as denims, you can use a gray cotton or a blue cotton, but in this you usually run into a lot of difficulties such as a lot of trash, foreign matter, sand.

Culver Batson

"On the other hand, denims is a piece of goods that doesn't require high-grade cotton, if you can get low grade cotton on a cheap enough basis it is far more desirable. In towels, quite a number of mills use strips, and some low grade cotton, because it is going to be bleached, and it is very easy to do this, and at the same time you are cutting down the cost of the fabric by putting these strips in, and some off-grade cotton. It has been my experience that you can handle tinged cotton better than blue cotton in this work.

"For the past 10 years or so the development of cotton mill machinery has been so rapid, and there has been a marked change in the manufacture of cotton fabric. At the same time, there has been almost as much progress made in the improvement of cotton. Some years ago a mill simply bought section cotton. That day has passed, because they produce just as many different lengths of cotton in North Georgia, for example, as anywhere else, in the short staple class, 7/8-inch to 1 1/16-inch. When a mill goes into the market today they simply buy the desired length which they need. Some mills discriminate by using only Atlantic States cotton or western cotton in preference to others. But in using this with the improved mill machinery, the results are entirely different. We have different cleaning machinery, such as the Centrif-Air machine, the Murray cleaner, and in addition, we have one-process picking, high speed spooling and warping, long draft spinning, etc. I am not going into the details of this except that I do think the improvement in cotton length with improvement in machinery has enabled every mill to operate at a fairly low cost.

"Whenever a cotton man buys cotton for a mill he buys the cotton that he considers the best cotton to use in the fabric that the mill is making, without trying to buy something that is better. If you are making broadcloths and your superintendent or manager tells you he wants you to use inch cotton, to begin with, you know that you will experience trouble. On the other hand, if he gets you full inch cotton your troubles will be reduced proportionately, and if he gives you 1—1/16-inch cotton, you are getting just as good as you are supposed to get. When you are having trouble with your mill, check up on your cotton. Ask your cotton man to check it. If you find that the cotton is what it is supposed to be, then hunt for your trouble somewhere else. Cotton is the most essential thing about a mill, but it is not all there is about it, because you have your settings, which are mechanical, etc. If your cotton is right it is bound to run good, if your settings are right. If your settings are right and you find your cotton is not right, you cannot make the grade. It will not run and you will have to make some changes.

"When you find such a condition to exist, do not jump on your cotton man immediately. Give him a chance. Take it up and compare it with him. It is just as much to his interest as it is to yours to see that you are getting what you want. Do not ask for Strict Middling if you are supposed to use Middling, and do not ask for 1 1/16-inch if you are supposed to use 1 1/32-inch. Co-operate with your cotton man."

L. V. Andrews asked Mr. Clark as to the best method of handling cotton when a mill does not have a cotton man, that is, one located at the plant. Mr. Clark explained that all a cotton man can do is to take a small sample from each bale and that if trouble develops in the mill, this should be reported to him at once.

Mr. Andrews next asked whether, in running regular bales and compressed bales, it is better to try to mix them, or to run them separately. It was the opinion of those discussing this that if the different densities of bales were used in sufficient quantity, that it is always better to run the regular bales and high density bales through the mill separately, making the necessary changes in the machinery to provide for the different cotton.

H. H. Willis, director, textile department, Clemson College, S. C., asked Mr. Clark whether it were better to use a cheaper or a higher priced cotton for a given construction, insofar as the weight is concerned. Mr. Clark replied that this depends upon the prevailing price of the different grades; he stated that on Middling cotton, the total waste including the bagging and ties, would run about 15 per cent; and on Strict Low Middling it would be from three to four per cent greater.

Mr. Clark was asked by J. V. McCombs whether, where a mill was making 18s to 20s out of 7/8-inch cotton, it was customary for the shipper to cull that cotton down to all 7/8-inch. Mr. Clark said that if a mill's contract called for 7/8-inch Middling cotton, "that is all you can expect. If you require 15/16-inch you should specify so many bales of that length."

J. H. Lindsay of Fieldale, Va., asked Mr. Clark

whether, on a contract calling for Middling cotton, a shipper could include five bales of Strict Low Middling and offset this with five bales of Strict Middling. Mr. Clark replied that under the Southern Mill Rules, these two sets of five bales could be rejected, if the contract calls for Middling cotton.

"It has been my experience that shippers go through their cotton very carefully, and when you buy Middling cotton from them you are not likely to get cotton better than Middling because they examine that cotton very carefully."

R. H. Tuttle of the Karastan Rug Mills, Spray, N. C., asked Mr. Clark as to the hygroscopic qualities of cotton from different parts of the country. Mr. Tuttle pointed out that in weaving, frequently filling marks will show up, and that he has heard this attributed both to loose bands and shaky spindles in spinning, and also to the fact that cotton from different localities took on dye differently even in the same dyebath and so produced a different shade.. Mr. Clark stated that in such conditions, it was likely that in some bales of the cotton there would be fibers that would have less oil in them, and the absorption qualities of these fibers would be different from the others, which would produce a streaked effect in the cloth, but, he said, "there is no way to eliminate the trouble unless a mill maintains a laboratory and examines every bale."

Mr. Tuttle pointed out that western cotton is harder than eastern belt cotton, with a coarser fiber, and that, "you will find that in yarn made of eastern belt cotton it will be softer than yarn made out of western cotton."

Mr. Clark brought out that it is difficult to pick out western cotton from eastern cotton by looking at it or feeling of it, and that the same thing is true with the fabric off of the loom, but that when it gets to the finishing, then that is where the trouble comes. Western cotton will not absorb or will absorb more than the eastern cotton, and that comes about from the fact that the western soil is different from the eastern belt soil; it has more alkali and lime in the soil which gives a different effect in the cotton.

Mr. Coggins, of Martinsville, stated that he did not agree with Mr. Tuttle that shade trouble in yarn was due largely to slipping bands or worn whorls; that one time in a sale yarn mill, they had run into difficulty of different shades on the same color, and had had to mark the different lots, from different cotton, Lot No. 1, Lot No. 2, etc.

At this time, L. V. Andrews of Martinsville opened up the practical discussion on carding, spinning, and weaving subjects, by asking, "Are you making any changes in your carding and spinning to take care of the new crop of cotton, for evenness and cleanliness?"

Chairman Batson explained that he had heard several men mention the fact that they had had more trouble with new crop cotton on account of unevenness of staple, and that they had changed their roll settings, etc., on account of this unevenness in staple —and that that was why the question was brought up.

"In this connection," offered Mr. Clark, "I would say that Carolina cotton last year was far better cotton than it is this year. It has been my experience that there is a lot of irregularity—long and short fibers—in the same bale this year. Western cotton has been a little better and more uniform. That is something that is mighty hard for the cotton man to eliminate."

"Have you had to open up the rolls to prevent cockled yarn?" asked Samuel T. Anderson of Spray.

H. H. Cosgrave, of Lynchburg, who is the spinner at Mr. Batson's plant, said, "We have had more trouble in the last year from uneven cotton than ever before. The way we overcame it on the regular run is by opening up our rolls anywhere from 1/16-inch to 3/16-inch, and on our finer numbers, double creel roving, we used a light-weighted middle roll, without any weight on it at all."

"Recently," said Mr. Anderson, "our carder told me that he had had to put in some more twist to take care of the short cotton."

L. V. Andrews

"Last year we ran a good deal of western cotton," said Mr. McCombs, "and we ran into that trouble quite a good deal. We have not changed our spinning twist, but we have changed our card room twist in spite of the fact that we opened our rolls to prevent cockled yarn."

Mr. Clark brought out that according to his experience there are more neps in the cotton than last year.

The next question as to the effect of blunt or worn roving skewers on the evenness and strength of the finished yarn, developed no discussion. The next one discussed was, "Can drawing frames with 10-inch coiler heads be made to fill up 12-inch cans?"

Making 12-inch Cans on 10-inch Coilers.

Mr. Batson expressed the opinion that this could not be done in a satisfactory manner, but Mr. Coggins of Martinsville, stated that he had done it. He said that he had two drawing frames of one make installed in a room that was otherwise equipped with another make, and that these two frames were equipped with 10-inch coilers, whereas the remainder of the equipment had 12-inch cans. He said they found that by making some adjustments they could make a can that was very good, but that it was necessary for them to make a number of experiments before arriving at the best way of doing it. He said you can set the tables a certain degree off of center; that he moved them first one-half inch, and then up to 1¾-inch to the front, and that, "we feel that that is just as good a can as we can make."

Mr. McCombs asked whether there was any difference in the distance from the coiler head to the top of the can, and Mr. Coggins replied negatively, adding that he wished to give credit to one of his fixers for the work of changing the frames over.

Mr. Andrews, superintendent at Martinsville, pointed out that Mr. Coggins had also slowed the coiler shaft, throwing the sliver out better; making

six teeth difference in the gear, on Pettee drawings. Mr. Coggins said that he had cans which filled very well all the way up, and that he had no trouble with the build getting narrower at the top, where the plate rubs the drawing, which is a complaint registered by Mr. McAllister in this connection.

Variable Speed Drive on Spinning.

The next question, which had been suggested by Mr. McCombs, was, "Is the variable speed drive for spinning applicable on old frames as well as on new frames?"

Mr. McCombs explained that, "We all know that after we have passed the first 30 minutes on the bobbin, there is no reason why we should not be able to speed our frames up, but I wanted to know whether this could be done on old frames as well as new ones."

Mr. Batson offered the suggestion that the variable speed drive is undoubtedly a good thing, in view of the fact that it would probably cause a mill with old equipment to re-vamp it; he cited a similar case in the Barber-Colman spooling and warping system which causes mills to go back and do more work in the card room and spinning room.

Left to Right, S. T. Anderson and J. O. Thomas, of Spray . .

Mr. Batson and several other men expressed themselves as greatly interested in the variable speed drive as a possibility on spinning. It was brought out that most of the installations that have been made of variable speed drive to spinning have been on existing equipment of frames already in operation on the constant speed drive. Mr. Willis of Clemson answered the question specifically by stating, "If the gentleman's frame is not already up to the maximum spindle speed, the variable speed drive will work on his frames if it will work on new frames." It was explained, that, if the speed at "doffing time" on the constant speed is not already approaching the limits insofar as the spindle is concerned, then it is possible to apply the variable speed and increase the spindle speed to within a margin of its limitations.

Mr. Taylor, secretary of the association, said that he shares an office with a representative of a variable speed drive and that he knew of a case where the drive had been tried on old spinning but would not work until the frame was completely overhauled, and that after this work was done the drive worked satisfactorily, giving a production increase of from 12 to 15 per cent.

"I have never had any experience with the variable speed drive," said Mr. Anderson, "but I think it is all right, and I think it would be a fine thing even if you did not gain any big amount in production. If you had to run it slower at the bottom, even, you could speed it up, and you would get much better work by regulating the speed."

The next question asked for experience with long draft spinning, but none of those present indicated experience of a sufficiently extensive nature to warrant a discussion of the subject. During a discussion of draft, Mr. Willis brought out the results of some tests which he had made on 1 3/16-inch cotton, a number of years ago, with a draft of 16, up to 80s yarn, which he said broke above the new Draper standard. He said that they had also run some tests on equal drafts, then some on regular drafts, then some on reverse draft (that is, putting the spinning draft on the slubber and the slubber draft on the spinning) and that his test showed that there was practically no difference in the breaking strength of the yarn made from these different twists.

The next question was, "Has anyone tried less than standard twist on warp yarn?" W. J. Jennings of Minneola Mfg. Co., Gibsonville, N. C., states that he runs a multiple of 4.50 on warp yarn and that when the cotton will allow him to do it, he goes down to 4.25. Mr. Lindsay stated that they ran a little less than standard twist on Middling 15/16-inch cotton. Mr. Willis raised the question, "Why put in 4.75 twist unless it is for finish? In 75 per cent of the cases you could get better strength with 4.50, that is, in the skein." He reported some tests to this effect on 22s yarn.

There was a brief discussion brought up by Mr. Andrews and his spinner, Mr. Coggins, as to the effect in the loom. Mr. Coggins reported a 5-day test, on 30s yarn. One showed, with a twist of 4.77, and an average 29.85s yarn, a breaking strength of 59.3 pounds; another, with 4.60 twist, 30.21s yarn, a break of 58.1 pounds; and another with 4.44 twist, a strength of 58.4 pounds.

Mr. Willis stated that he had no record as to the effect of the lower twist on the elasticity of the yarn, in weaving, his records being made on skein tests.

J. V. McCombs said that he had never run 4.75 twist multiple on one-inch cotton. He stated that the tests upon which the standard of 4.75 was arrived at were based on the work of 136 cotton mills using cotton up to 1-inch.

Mr. Andrews brought up the final point that was discussed, which was whether, when roving changes to where it will average a half grain light, whether it is better to leave the same twist gear on, or whether it is better to change the gear and put in more twist, and the consensus of opinion was that the extra twist should be put in.

A luncheon was served to the members at the close of the morning session, and following the meal, a brief moving picture program was presented by the local mill representatives, which was followed by a short talk of welcome by Luther H. Hodges, one of the executives of The Carolina Cotton and Woolen Mills Company.

Following the entertainment, the members were addressed on the subject of "Boiler Efficiency, Steam

(Continued on page 77.)

Some Textile Reminiscences

By J. E. Hardin

Secretary and Gen. Mgr.,
Proximity Manufacturing Co.

•So graceful and informative a discussion as this should be read by everyone connected with textile manufacturing. It presents in a charming and thoroughly readable manner the history of textiles and dyeing, and is a record of the romantic days in which southern textiles were established and developed . . . . . .

THE textile industry probably reflects in its history more thrilling events and more constructive accomplishments than any other of the fundamental industries. That is a broad statement, but the history of our industry in all of its different branches blazes across the horizon of many centuries, back as far as human records reveal.

The first inhabitants of this earth decorated their naked bodies with colors as varied as the proverbial Joseph's coat, and wore skins of animals for clothes. Madam Eve, with her fig leaves, was no trifling modiste. She at least utilized color and had originality in her designs.

The craftsmanship of color has done its full measure in recording and transmitting to us much of the doings, inspirations and ideals of the ancients. Color and textiles combined have wrought mightily in developing and hastening progress, in broadening the vision, intensifying the ambitions, solidifying the character, and keeping the lights of the human intellect trimmed and burning.

The mere making of fabrics and colors to beautify them, while fundamental, and vitally necessary for human comfort and happiness, does not represent the major achievement of our important industry. But the intense interest in these processes, the failures, the successes and inspirations, the visions resulting therefrom, and the lofty motives of their most successful exponents, have done more than that: they have improved human character and broadened our spiritual horizon.

The pleasures and advantages to be derived from reminiscing are incalculable. If we pause occasionally and realize where we have come from in this industry; where we are now; and whither we are probably headed, we will no doubt have more interest in, and zeal for, the work in which we are engaged, and the goal toward which we are lavishing our life's best efforts.

This is an abstract of a paper presented by Mr. Hardin at the annual convention of the American Association of Textile Chemists and Colorists in Greensboro, N. C., in December.

Color Was Born with Light.

"Where have we come from" in this textile industry and science of color? Color started with the beginning of earthly things. As soon as there was light there was color and instantaneously mortals were endowed with the faculty of discriminating between beauty and ugliness. Colors are much older than the knowledge of how to produce them, or to imitate the original God-given standards. Dyers and colorists work to standards. The Great Jehovah set a few standards in his firmament during the first week of his earthly creations and bedecked the earth everywhere with hues and tints which will keep the most skilled busy trying to reproduce for many generations yet unborn. And then, Almighty God, who sits on His great White Throne will still hold in His mighty hand those immortal standards still unsuccessfully matched.

"The First Boss Dyer."

Clothes and colors have played a most important part in human desires and human necessities through all the ages of the world's history. The first interesting romance we seem to have relating to the production of color on cloths leads back in the form of a legend to the early days of that comely nymph, Tyros, as she leisurely strolled with her lover on the glistening sands of the shores of the Mediterranean. When she saw her poodle dog bite into a strange fish she noticed a fascinating purple stain which remained on the puppy's mouth. Then and there she inspired her hot-hearted, eager-to-please, boss-dyer lover to catch some of those strange fish and extract that marvelous coloring material from them. With this he dyed a frock for her and thereby originated the famous Tyrian Blue, used for many centuries to color the royal robes of kings, princes and priests.

After that daring young prince, Alexander the Great, had led his conquering armies to India, Persia, Arabia and Egypt, plundering and appropriating to himself whatever was of interest and profit; he returned to his cultured Greek admirers with a strange substance which he named "vegetable wool", which in reality was some original variety of cotton, and with it also brought a marvelous process for producing gorgeous black, green and yellow colors. That blazed the trail and opened up and exploited great channels of trade and commerce, the chief articles of which were textiles and coloring materials. He then founded his namesake city—Alexandria, in Egypt, which became for thousands of years, and still is, the center of the world's finest and most silk-like cotton. Centuries ago there were heralded to the then known world, the glories of that historic metropolis on the Nile, which produced marvelous fabrics with rich and wonderful colorings which are still in existence to baffle and awe textile designers and colorists of today.

Centuries ago the Persians developed a secret

method for making rugs, by the manipulation of a few crude sticks and strings, and driven by that great dynamic force of human ambition to excel, they colored the rugs with mineral and vegetable dyes, the secret of the application of which no scientist knows. They represent an art, ambition and tradition, and a life's work which are admired and sought after in the world's most cultured centers.

The Early History of Color.

On the other hand, block printing was brought by the Arabs into Spain when they conquered that country in the eighth century. This was a great improvement over hand painting on cloth as practiced by the Hindoos and was used exclusively for over a thousand years for producing figured textiles. But that process pales and flops into insignificance when compared with the modern sixteen-color intaglio monster textile printing machine, with delicately engraved copper rolls and using your vat and fast colors and driven by variable speed electric motors at terrific rates of perfect production.

When that daring navigator, Christopher Columbus, first came to American shores in 1492, he found the natives gently snoozing out their daily siestas in hammocks. Had he explored into Mexico and Peru, he would have found the Aztecs practicing the art of making cloth and dyeing cochineal red and other beautiful colors.

Blank-Stoller.

J. E. Hardin, of Proximity Mfg. Co.

The Germans, Dutch, French and English improved and refined the vegetable, animal and mineral dyes, and afterwards they originated the aniline and coal tar colors, and next the synthetic colors and vat dyes.

Up to the outbreak of the World War, Germany had a world monopoly on the color industry. That crisis found America with its mammoth and highly developed textile industry apparently hopelessly enthralled in the very embarrassing predicament of having no dyestuffs. It was this crisis which gave birth to the spectacular development in our own country of a dye and chemical industry which astounded the world, all of which is just another tribuse to American ability, ingenuity and resourcefulness.

The Beginning of American Dyes.

Up to November 1, 1915, we had produced few dyestuffs in this country of any consequence except small quantities of sulphur colors, and it was about that time that research work really began in earnest and the American people were brought to the serious realization that something would have to be done immediately to develop a color industry in this country if the manufacturers of articles requiring color were to carry on.

I have in my possession a small bottle containing about two ounces of what is supposed to be the first synthetic indigo produced on the American continent. This was brought to Mr. Caesar Cone by the late Dr. Dow, early in the year 1917. Up to the outbreak of the World War the mills with which I am associated consumed about one-third of all the indigo imported into the United States. You can imagine the embarrassing position in which we found ourselves, when the supply of German indigo was so suddenly cut off. The only substitution left available and procurable in quantity for producing dark shades of blue, was logwood extract. The difficulties we experienced in producing a shifting and uncertain blue from a dyestuff naturally black, will remain as a nightmare to haunt the ambitions of those who propose any substitute for that old reliable blue dyestuff known as indigo and its synthesis. Today American dye manufacturers are able to furnish us with all classes of colors of excellent quality and in successful competition with foreign manufacturers.

If you will pardon a political reference, I desire to state that I am one of those optimistic southern Democrats, who does not believe in the creation of an unreasonably high tariff wall to protect to the point of unsound economics, our American industries against foreign competition, but only insofar as is necessary to equalize the cost of efficient production, and to give the American workman a just and fair wage compensation commensurate with his skill, intelligence and high standards of living. An unreasonable tariff places our American export goods in very distasteful favor with our foreign would-be customers and inclines them to exercise a full measure of retaliation against our goods.

Development of Manufacturing Processes.

It would be amiss in these reminiscences on textiles to omit a reference to the tremendous importance of the basic processes relating to the making of fabrics invented by those early Englishmen, Messrs. John Kay, James Hargraves, Richard Arkwright and Samuel Crompton. Their contributions to our industry can never cease to merit our sincere appreciation and admiration for their marvelous ingenuity. Their inventions opened the door to a new day for the production of fabrics of all kinds, and a new era for administration to human needs and pleasures. The discouraging days in which they wrought out their marvelous achievements and the trying conditions under which their inventions were exploited, and unappreciated by their contemporaries, are probably not fully enough realized by those of us who at best have contributed little except refinements to their great original basic ideas. We have accomplished far less in the way of valuable initiative and ingenuity, but we have entered into their labors and are reaping the benefits of their marvelous vision.

When Samuel Slater organized and built the first mechanical cotton factory on the North American continent at Pawtucket, R. I., in 1790, and brought the inventions of those world-famous Englishmen to

this country and built them with his own hands into practical working machines, and put his mill into successful operation, he blazed the way for the start of the textile industry in this country. He did more than that. He was the original outstanding captain of our industry. He set a standard for this nation for improving the conditions of working people to a far greater extent than any of his predecessors or contemporaries. He was not only a pioneer in cotton manufacturing, but he organized and conducted in his own house the first Sunday school ever organized in America and taught his employees and their children to read and write and to revere and love the Holy Scriptures. Mr. Slater was, therefore, the original American cotton manufacturer, master builder, teacher and outstanding citizen and was responsible for successfully planting on this continent an industry which has contributed so lavishly to creating wealth, initiative and administering to human needs.

The First Southern Mills.

In 1828 Henry Humphreys founded the Mount Hecla Steam Cotton Mills in Greensboro, N. C. It consisted of less than 3,000 spindles and 75 looms, and made plain white sheeting, shirting and osnaburg and also cotton warp yarn. His customers came from far and near in wagons and camped around his factory, waiting and begging to buy the products of his wonderful ingenuity. He sent agents with part of his products in large four-horse wagons to other communities and sold them direct to the individual families, taking in return cotton, wool, provisions, and articles of trade of the times for the use of his employees and to sell to others. He also devised and secured authority from the State to issue a system of local currency or money which was the popular and reliable medium of exchange in this community at that time. He established in this community a new means of livelihood and inspired new ambitions in the lives of the citizens of Carolina. He was another captain of the hosts of early industrialists and a merchant prince and financier, who established here a sound system of economics, which I doubt if to this day has been improved on for fundamental soundness, even by the modern textile merchants, jobbers, chain stores and bankers.

Mr. Humphrey's face was turned toward the rising sun and he lighted the way for those of us who, though less worthy in initiative and accomplishment, but have tried to enter into his labors and are traveling in comfort, safety and prosperity the trail which he so courageously blazed.

One of Mr. Humphrey's young apprentices was the ambitious Edwin Holt of Alamance county, who a short time afterwards bought a few crude spindles, wrought by hand in a blacksmith shop in Philadelphia and hauled that machinery in slow ox- and horse-drawn wagons over long and rough muddy roads all the way from Philadelphia to Burlington in Alamance county, North Carolina. He built a few crude power looms and developed a small water power, and started up the original cotton mill, known as the Alamance Factory. From the Mount Hecla Steam Cotton Mills and the Alamance Factory sprang the present textile industry of the Piedmont section of the Carolinas, which now boasts more than ten million spindles and is probably the highest developed and, in normal times, the most successful textile area which has ever existed throughout the history of the world.

Tradition relates that Mr. Holt hired a French tramp to teach him how to produce colors on cotton yarn. He made his first dyeings in a cast iron wash pot, which is still in existence and treasured by his successors as a loving relic of those courageous times. He rinsed and developed the stock in wash tubs and hung it out on the fence to dry and warped and prepared by hand his yarns for weaving, and thereby established the first colored goods mill in this section.

These early pioneers laid a sub-foundation deep down on a solid rock for the textile industry which has meant more for the genuine development of the South in all its rich fullness than any of their military or political contemporaries. It will interest you to hear some of the formulae for dyeing in use about that time.

To Dye Green.

"Take red oak and hickory bark, equal parts, boil them together very strongly, then take out the bark and pour in the vitriol and indigo very slowly; make the dye boil, then put in the hanks of yarn and keep stirring, then boil 15 minutes, then remove the stock and give it the air; then put the stock back into the liquor and boil 5 minutes longer, take the stock out, hang it in the shade and give it some more air. One-half pound vitriol, one ounce indigo, two pounds alum to dye twelve pounds of wool. The dyeing to be made in a copper vessel. The indigo and vitriol to be mixed overnight."

To Dye Red.

"Two pounds of Brazil wood will dye two pounds of yarn. Boil it in a copper kettle until the color has been extracted out of it, during which time the yarn will be washed clean and let it lay in a strong alum water, then strain the dye and rub the stock and dye and alum water together; put all in a bottle and simmer them slowly. Be sure to give the stock the air frequently. This quantity will dye a beautiful crimson, and by using half that quantity a paler shade of crimson will be dyed."

To Dye Yellow.

"Make a strong soap suds with warm water, put the Arinetto into a thin bag and rub it out in the suds, then put in the hanks of yarn and let them soak an hour or more, then put them with the suds into a pot and boil 15 minutes, take them out, dry and wash them in cold water."

These methods of dyeing and producing colors on textiles may seem crude to doctors of chemistry and highly specialized modern dyers and colorists, but please remember that these were the best methods that they had at their command. The fastness, permanence and beauty of some of these colors were really remarkable.

As to the present position of the textile and color industry, I need not elaborate on that, because we are all familiar with it. One of the most tragic situations in it has developed within the last few years. When we realize the condition which now exists in some of our sister states in the East and view the great textile plants which have flourished in some of those states for generations, but which are now still and cold in the presence of liquidation, we are saddened to realize the underlying cause of this catastrophe. I am persuaded by some of my friends connected with those plants, in whose opinion I have confidence, that these unfortunate conditions are largely the result of a lack of co-operation between owners and employees and state governments. These three fundamental elements have not worked together, and the lack of harmony has all but ruined a great industry.

The Southern Development.

The rapid growth and phenomenal success of cotton manufacturing in our own Piedmont section must not be taken by us too much as a matter of course, not that it will continue simply because we are so singularly blessed with so many natural advantages. We who live in this section and are engaged in this industry must recognize the tremendous responsibilities that evolve upon those of us connected with and responsible for its management. We must bear in mind that we are obligated to those who have invested capital in this industry and are in like manner responsible to those who are working with us to the end that hearty co-operation for the common good of all must be the chief incentive for the full development and carrying on of an industry which has created a new day and has caused the sun of hope to shine again on a section which was so tragically blighted only a few decades ago.

In the early stages of the development of the cotton manufacturing industry in the South, only plain and staple goods were made, but in recent years we have expanded into the manufacture of finer classes of fabrics. The dyeing and finishing end of the business has also been developed hand in hand with the making of finer goods, until today we have in this section of the South a high development of the bleaching, dyeing, printing and finishing branches of the textile industry. In the early history of colored goods here in the South, none of the mills pretended to do even the simplest processes of finishing. Cheap plaids, ginghams and cheviots were shipped all the way to the North to be calendered, napped, tentered and finished.

As recently as in the early nineties, there was established here in Greensboro probably the first plant south of the Mason and Dixon's line for finishing colored cotton goods, and this probably was the most practical means of demonstrating to southern manufacturers of colored fabrics the necessity of doing their own finishing. Since then the finishing of the better grades of fabrics has received great impetus and has resulted in the establishment of a number of modern and successful bleaching, dyeing, printing and finishing establishments.

Many of our northern friends have moved down here and have cast their fortunes and careers with us and they and the textile schools and native talent have added greatly to the development of this important branch of the textile industry. We have room for them all here.

We also need to become more painstaking, more scientific and to apply more serious efforts to research work to the end that our industry may be more thoroughly and successfully carried on.

It is a long call between the hand painting of the Hindoos and block printing methods of producing colored figures on textiles as practiced by the early Europeans. It is an even longer stride between crude block printing and the modern ten-color duplex printing machines, using fast, bright vat colors and running at 50 to 100 yards per minute, producing fabrics of the highest quality and embodying the most beautiful reproductions of art. It is machines of this character which have made it possible to manufacture fabrics that can be sold at only a few cents a yard, so that enough can be bought by the American girl for less than a dollar to make a dress, which would put to shame the robes and gowns of queens of the royal blood produced centuries ago, under conditions of serfdom and servitude, which stifled human ambition and vision.

The next serious problem which those coming after us will have to face is where are we headed for? What does the future hold in store for our industry?

That future is vaguely concealed from our view by a thin curtain, woven from the silken threads of applied science in that golden loom of unsatisfied research, and with that undaunted shuttle of human perseverance, bleached in the blazing sun of intelligence, skill and honesty, and colored with that amazing and delicate hue of unbounded ambition.

It is not always knowledge that brings success, but the man who is willing to make personal sacrifices—the man who has the bull dog tenacity to keep digging—the man who makes a study of every phase of his work—the man who is willing to give and take—the man who feels as though he owned his job and that every dollar is his own personal money to be dealt with accordingly—that's what counts.

Yes, I'll admit that mistakes are better never made. However, that is almost impossible for any human being—the thing which makes the boss so darned mad is for you to make that same mistake again.

The road to that bigger job is a long one with many steep grades—there are many places where you will have to put on chains—the thing to do is to have the chains when you need them.

The road that is easy to travel—anybody can travel, therefore it is full of overseers and superintendents who are just drifting along with the crowd and incidentally getting the same pay that the crowd is getting.—OLD-TIMER *Sayings.*

A Dyer's Report of the Convention of Chemists and Colorists

THE twelfth annual convention of the American Association of Textile Chemists and Colorists was held at Greensboro, N. C., in the King Cotton Hotel, on Friday and Saturday, December 2nd and 3rd. Dr. R. E. Rose, director of research, E. I. du Pont de Nemours & Co., Wilmington, Del., was elected as the new president, succeeding P. J. Wood, of Passaic, N. J. William H. Cady, of Providence, R. I., and Alex Morrison, of Andover, Mass., were re-elected as vice-presidents. William R. Moorhouse, of Boston, will serve as treasurer; and A. Newton Graves, of Providence, as secretary, during the coming year.

The program of the meeting was replete with technical papers, and consisted of three technical sessions and a concluding banquet. The technical discussions were interspersed with delightful entertainment features presented under the direction of the Piedmont Section of the Association—of which Arthur R. Thompson, Jr., superintendent, North Carolina Finishing Company, Salisbury, N. C., is chairman.

The convention was concluded on Saturday evening was an interesting and delightful banquet, during which W. S. Lee, vice-president of the Duke Power Company, and Dr. Frank P. Graham, president of the University of North Carolina, addressed the delegates.

Due to the the extremely technical nature and varied subject matter of the large number of papers presented during the meeting, we present as a brief report, a summary of the reactions of one practical dyer who attended all of the sessions, this being given, of course, as the writer's own impressions. This account follows:

By Harold Schroeder

IT would be unfair to the authors of the excellent papers to single out any gradation in quality, since they were all good, but I am quite sure that all who attended the convention will agree that, for adherence to chemistry for its own sake as a science and as an example of what a distinguished textile chemist can do toward further textile chemistry as a precise science, the prize, if there were one, or the laurel wreath, if any are grown now-a-days, should be awarded to H. M. Chase, for his paper on the "Detection of Heavy Metals and Traces of Impurities in Cotton Fabrics."

Mr. Chase's paper could bring no joy to manufacturers of test tubes, because in his analysis he will have none of them, nor for filtering does he use funnels or filter paper. When he sets out to make an analysis he pulls his microscope out of its case, sets it down on the desk, polishes up a common glass object slide and proceeds to deal in what he calls micrograms.

Now, I know what a gram is; there is no trouble in seeing that amount of anything—but Mr. Chase goes further, much further. He proceeds to set up a unit of analysis which is one millionth of a gram, a microgram, which nobody can possibly see or weigh, and then, by methods which are simple to him, he devises means and methods by which the invisible is made apparent and the imponderable is measured.

Using 100 milligrams of cloth or yarn, this amount is ashed in a few minutes and brought into solution with one drop of dilute acid. This one drop is carefully and delicately placed on the micro slide. Next one single drop of reagent is placed on the slide near to but not touching the first drop. Using a platinum wire and the touch of a surgeon a line of liquid is drawn between the two drops, and by tilting the slide the two are mixed. Then the microscope is focused and the marvels of the chemical reaction are made visible. From the shape of the crystal precipitated and their color he deduces the presence or absence of deleterious metals and can arrive at a fair approximation of the percentage present. When it becomes necessary to filter out the products of one reaction so as to make another, he allows the precipitate to adhere to the glass slide, and then by tilting the slide allows the liquid to flow away to a new place.

Not content with approximation, however, he has refined a method for the quantitative determination of copper which can tell the difference between 2½ and 3 micrograms of copper. The details of this can best be read in the original paper but any chemist or dyer who heard this must surely have left the meeting with a firm determination to do something himself in the realm of micro-chemistry.

The New Gardinols.

The next paper to be commented on dealt with the relations between the new Gardinols and soaps. This paper was presented by Dr. Samuel Lenher of the du Pont company, and demonstrated that Gardinols were microscopically akin to soaps. When used in distilled water there is no difference in washing power between soaps and Gardinols, but when the water is hard or acid then under those conditions the washing power of soaps is hindered or destroyed while that of the Gardinols continues on.

Let us follow Dr. Lenher as he shows the reason for the difference. Soaps may be written R-COO-NA, and that chemical shorthand symbol means that a

long chain carbon group has been hitched onto an organic acid radical called Carboxyl or COO, and this in turn is attached to an alkali, NA. In other words, the soaps are the sodium salts of fatty acids. But the fatty acids are only soluble in water because of the alkali, and as soon as the addition of acid in the water removes the alkali the fatty acids are set free. Of these fatty acids the lime or magnesium salts are insoluble so in hard water the power of the soaps is diminished.

Gardinols may be written chemically, R-SO4-NA, and you will see quite a similarity in the construction to that of the soaps. Gardinols are derived from sulphuric acid, that biting chemical which comes in carboys and which deserted wives used to toss at erring husbands. This chemical can be written H-SO4-H, and by some ingenious grafting a long chain of carbon atoms is slipped in to replace the first H, making R-SO4-H, and finally the mix is neutralized with alkali, and we get R-SO4-NA.

Now, while in soaps the R-COO is insoluble by itself, we find that in Gardinols the R-SO4 is quite soluble; so, as far as a Gardinol is concerned, it can and does swim around totally unaffected in acid. In addition, while the potassium salt of Gardinol is insoluble, the calcium and magnesium salts are soluble, so hard water does not affect a Gardinol.

Now, to follow Dr. Lenher a little further, we must find out what he meant by micelles. This is a term occurring all of the time in soap chemistry, and those of us who have struggled through the past years until we can talk nonchalantly of pH must just agree to struggle a bit harder and get acquainted with micelles. When you first hear the word it does sound a little like the name of a young lady from Armentieres, but, unlike that young lady, who always traveled alone, micelles are a name for groups of soap molecules banded together so as to be able to do a good job of cleaning. The individual particles composing the micelles are themselves vibrating like perpetual marathon dancers. This is known as the Brownian motion.

Soaps reveal the presence of micelles to the ultra microscope, but in addition to micelles all soaps show the presence of particles in actual solution. Accordingly a soap solution is now what a chemist calls homogenous. It is mixed like hash. Gardinols produce a solution that is all micelles. There is no evidence of true solution, so since it is the micelles that do the cleaning, and since soaps are only partially divided into micelles and since Gardinols produce nothing but micelles, it follows that pound for pound Gardinols should do more work than the soaps.

Of course, when you first hear of these new products, you may wonder what will happen to soap, but the matter is not quite so simple as that. In some textile operations the use of soap, with its accompanying active alkali, can be and is of more value to the dyer than a product which has no active alkali in its make-up. The boiling off of silk is one instance in particular, and other cases will come to the mind of any dyer.

There are two types of Gardinols: one which does its work in the cold, called Gardinols, and another, used for finishing, which does its work at the boil and is called the Brilliant Avirols.

Silicates in Textile Finishing.

While on the subject of detergents, we can also mention the paper by Dr. Sterricker, of the Philadelphia Quartz Co., on "Some Uses of Silicates in the Textile Industry." While the speaker did not mention it, some of the points which he brought out as being characteristic of silicates were quite analogous to some properties of sulphonated oils. To a dyer it was interesting to hear an expert on silicates recite the peculiar properties of silicates and mentally to co-relate them and those of oils. Solutions of silicates are colloidal. So are those of sulphonated oils. It was not possible, unfortunately, to discover if silicate solutions contain micelles. Silicates are salts of weak acids. So are sulphonated oils. Silicates are powerful regulators of pH, that is to say, they are buffer solutions by which is meant that additions of acid or alkali to solutions of silicate or sulphonated oils, within limits, do not affect the amount of active alkali present in the bath.

Dr. R. E. Rose, of duPont Co., new president of A.A.T.C.C. . .

Differences between silicates and sulphonated oils begin to appear when their detergent properties are compared. According to Dr. Sterricker, the addition of silicate to a soap solution has the property of preventing the dirt removed from one piece of fabric from being deposited upon another. So powerful is this property that wool bleach baths containing silicate are being used continually for six months at a time.

Another difference between silicates and sulphonated oils was brought out in discussion from the floor. Dr. Sterricker maintained that, discarding silicate resists, silicate solutions are not substantive to cotton, that is to say, the detergent action of the silicate on the cotton is carried on without any absorption of the silicate by the cotton. Sulphonated oils are substantive to cotton and are absorbed by the cotton. The leveling action of the silicate in dyebaths was mentioned, as was their use in obtaining a semi-permanent finish in conjunction with corn starch. Dr. Sterricker showed one kind of silicate which bounced like a rubber ball and floated in water, and another which tore like a stick of taffy and sank in water.

Talk on Ageing.

Dr. R. E. Rupp has been doing some work around a print works ager, and emerged with some conclusions which were found of interest. He was trying to determine the conditions necessary for the best work, and found that so far as temperature was con-

cerned that 212 degrees F. was just what the doctor had ordered, but that the ager showed an annoying tendency to get too high in temperature. The bulk of his paper was devoted to his praiseworthy attempts to find out why the temperature insisted on climbing. Like a true Sherlock Holmes, he got his man, or his cause, in the heat of hydration of the glycerine in the print paste. Reasoning from that he figured that if the cloth was allowed to go into the ager containing water that there could be no heat of hydration. He found, by trials, that this was so, but some superintendents were more concerned about water spots on the damp cloth than they were about ager temperatures, so pure science had to find a suitable compromise. Greatly increasing the flow of steam in the ager helped to reduce the temperature all right but, although Dr. Rupp did not say so, doubtless the fireman and the engineer had something to say about that. Dr. Rupp found that an ageing of four minutes was the best, that the pressure in the ager was so slightly above the atmospheric pressure that it had no effect on the temperature. This paper produced quite a little bit of discussion from the floor, and it seemed at times as if some who spoke were not quite convinced on some of the fine points; altogether an ager is a difficult affair to handle.

P. J. Wood, of Passaic, N. J., the retiring president . . . . . .

Testing Waterproofing.

The two research associates of the Association were on the program, and produced two fine papers on subjects of interest. The Association is doing considerable research work on methods of testing our products, and W. C. Smith described a machine for testing the resistance to wear of water-proofed duck. He built a machine which dragged a strip of cloth, on a bias, back and forth over a weighted knife edge. After a pre-determined number of pulls, he took this piece of cloth and fitted it in as the fourth wall of a box containing water and measured the weight of water that came through in ten minutes and compared this amount, after testing on the machine, with the figure for the unrubbed cloth.

It was obviously a source of pleasure to Mr. Smith's scientific mind that his apparatus when tested on many fabrics proved its value most convincingly by actually improving the waterproofing on some fabrics while nearly ruining that on some others. He felt, and his audience agreed with him, that such a device is pretty sound.

Dr. Milton Harris, the other research associate, had his audience flat against the ropes in the first two minutes with his facile remarks concerning positive and negative charges and what a dyestuff did when it got up against one of them. Shorn of his precise and very exact terminology, Dr. Harris was conveying to us some practical points in connection with the iso-electric point of wool. Wool is both an acid and an alkali, but there is one point at which it is neither. This is the iso-electric point and occurs at 3.4 pH. Probably no modern dyer needs to be reminded that 3.4 is an acid pH. Accordingly, wool is an alkali in an acid bath so long as the pH is higher than 3.4. Now let us follow Dr. Harris when he describes the washing of carbonized wool with water in an effort to neutralize it. The first wash produces a pH of less than 3.4 but the second wash makes the wool give us less acid to produce a pH of greater than 3.4. Now, what does that fool wool do? It suddenly realizes that it is supposed to be an alkali, the pH being higher than 3.4, so back it grabs some of the acid and that is why carbonized wool cannot be neutralized in water. The rest of the paper represented charts of dyestuffs in relation to the amount absorbed by wool at various pH ranges.

Peroxide Bleaching.

Turning from wool to cotton, C. L. Eddy of the Renfrew Bleachery gave a very sound paper on the peroxide bleaching of piece goods. He brought out that the costs are comparable with those of chlorine, that when intended for subsequent dyeing the goods are softer and loftier, dye more evenly, need less direct dyestuff for a given shade, but are apt to need more vat color because of better penetration. The method which Mr. Eddy described is to give a sour previous to passing the goods through caustic into the kier. A ten hour boil at 18 pounds pressure was advised following which the goods are washed and then impregnated with the bleach solution before running back into the kier. An automatic piler was advised. Peroxide bleaching is carried out under no pressure, the top of the kier is left off. The temperature is around 190 degrees F. and the bleaching is complete in about 1½ hours. When finishing the goods after bleaching a washing in plenty of hot water was suggested.

Gryder on Dyeing.

Continuing with cotton, D. A. Gryder, of the Holt Plaid Mills, gave an interesting paper on modern dyeing problems. He brought out that while vat colors are of course the fastest obtainable, that dyers today are being required to attempt to match the fastest of colors with dyes that are more easy of application, that is to say, the direct colors. He went into some detail concerning the differences to be found in fastness between various depths of shade of the same dyestuff. Mr. Gryder made it clear that only in light fastness could there be any approximation by direct colors of vat color fastness. He emphasized that every dyestuff had some fault and that it was the business of the dyer to know these and to allow for them. He made a special plea for laboratory control in the dyehouse and pointed out that most all of the dyehouse troubles come about because of faulty pre-dyeing laboratory work.

(Continued on page 75.)

CURRENT TEXTILE TOPICS. . . .

Talk of the Month

HAD there been a commensurate increase in the rate of employment and payrolls in other major industries, even the most pessimistic individual would realize that most of the economic problems in this country would be well on the way to solution, commented the well-known commission house of Bliss, Fabyan & Company in referring to the notable rise in textile production which marked the leadership of this industry toward recovery from the depression. As an example of this rise, this old house cited the fact that a study of conditions in 22 mills associated with Bliss, Fabyan & Company showed an increase from July 30 of 153 per cent in the number of operatives employed and of 150 per cent in the wages paid.

The General Situation in Textile Markets.

Production is the foundation source of actual wealth, hence in this situation is the first constructive sign of a healthy economic position for the country. Of itself, the textile situation at the start of 1933 would be decidedly encouraging. This applies to cotton goods, wool fabrics, rayons and silks, in which, right up to the middle of December, signs were given that the slackening period between the fall and spring seasons was to be less than normal. It is timely to note that, while the progress of textiles has led to developments bringing one fiber and another into more inter-related competition, all have made notable advance in this first converging movement out of the depression, after false starts in two or three earlier seasons.

In the gains over the second six months of 1932, the pinnacle was reached by rayon, which was estimated to have attained a full 100 per cent rate of production. But the rise of cotton from 51.7 per cent of single-shift capacity in June to 97 per cent at the fall peak is more notable because, as pointed out recently by Secretary Russell T. Fisher of the National Association of Cotton Manufacturers, this staple represents 79.7 per cent of the consumption of the four leading textile fibers in this country. In view of such a large proportion, the way cotton manufacture goes is a big factor in the broad textile situation. One other notably encouraging element of the half-year was the general regulation of production, indicating that the expansion was in response to increasing demand.

Such conditions should be the basis for a more prosperous business in 1933, but the question is when consumers may be expected to pay more as well as to buy more. The strong advance in commodities generally throughout the summer was a source of hope which was extinguished in the subsequent drastic declines, incident to hesitation created by the election and the international debt crisis. But the year-end brought some suggestion that supply and demand conditions in raw materials may be expected to improve gradually, perhaps rapidly, in the coming months. This implies a better price situation for raw materials. It was significant of a feeling that deflation had been carried to the ultimate in cotton when in December the most bearish of four successive surprisingly large estimates of the cotton crop left no impression on the price basis.

Cotton goods distributors have been considering other factors affecting purchasing power, such as the net rather than the gross returns of buyers in their respective fields. For example, the Hunter Manufacturing & Commission Company notes that the Department of Agriculture estimated gross farm income in the United States at only $5,240,000,000 for 1932, $1,715,000,000 under the mark of 1931. "After all," said the Hunter report, "figures as to gross income are interesting but do not reflect the purchasing power of the farmer. Inasmuch as the farmer has been steadily re-adjusting his values and costs since 1920 and now has an exceedingly low cost, a fair advance in commodity prices, for instance in line with cotton prices which ruled in August and early in September, would very materially increase the consumption of goods."

Except for such items as taxes and real estate the readjustments have made undoubted progress. Of necessity, taxes will finally succumb to the universal clamor for readjustment, or rather the public expenditure will be altered to conform to the new condition of things. The trend of purchasing power, meantime, remains intangible and yet the making of goods prices should be based upon the assumption of an improving trend. It is one of the anomalies of business that buyers, themselves acknowledging the benefits all around of firmness in prices, are nevertheless bound to seek the lowest prices. This puts the onus of creating firm conditions upon sellers. Sentiment is slow to change, but a timely word comes from R. B. King, president of the Durene Association: "We must take advantage as an industry —and all industries must—of the upturn in national psychology and the underlying satisfactory facts upon which the better view of business is today rightly based."

Price conditions obviously are mixed up with regulation of output and this matter has continued to be a moot topic in the cotton industry nationally. The fact that it must also be considered internationally as the years go on is attested in the present course of things, as indicated by the notable expansion of cotton manufacture in the Far East, graphically set forth by the International Cotton Committee at Lugano in October. Thus while we are feeding cotton to Japan we are fostering competition for our mills. The problems which the large international industries are running into through "splitting up into a large number of isolated national units" and development of disastrous competition each in-

dustry within itself is called to attention, with a suggested remedy, by a writer in the London Times Trade and Engineering Supplement of November 5th.

New England Mill Situation.

COTTON manufacture in New England has kept step relatively with the industry throughout the country in the first six-month period for several years in which the textiles have faced the future with a real spirit of enthusiasm. After a rise in production, estimated, from less than 25 to approximately 75 per cent at the peak, the industry of this section reached the year-end confident in the expectation of a quick return to activity after less than normal slackening from the fall turn-over, albeit aware of the necessity for improvement in the broad economic condition. Regulation of production in the industry is a matter vital to the section, especially Massachusetts, but this condition emphasizes the soundness of expanding production.

Among the encouraging developments toward the year-end was the marked increase in employment in Fall River. The re-opening of the Firestone Cotton Mills, partial starting of the Howard-Arthur Mills, and the full operation of Plant E of the King Philip Mills, as well as the adding of a number of looms at the Narragansett Mills, were conspicuous announcements. Another was that the Chace Corporation, Inc., a new plant, was getting ready to start in a small way.

Only small operations were announced for the start by the Howard-Arthur Mills, formerly the Seaconnet, but the mangement was looking for expansion before long, indicating faith in the soundness of the general textile improvement. The Narragansett management was also said to be anticipating further expansion before the close of 1932, as this report was written. The Howard-Arthur Mills had been idle since the low point of the depression. The King Philip unit, a branch of the Berkshire Fine Spinning Associates, increased from about three-quarters of capacity to full operation.

Firestone Cotton Mills re-opened after a shutdown since August, and work began on the two-shift basis. These various expansions at Fall River meant work for many hundreds of additional operatives in the community. Operations of the Firestone plant in New Bedford were reported about the same time to have reached approximately 75 per cent of capacity on a double-shift basis, after several weeks of gradual expansion. These two Firestone units themselves were calculated to be employing about 700 workers each. It was also figured that two shifts, of six hours each, would be kept busy for an indefinite period.

Henry P. Kendall, president of the Kendall Company, brought the matter of severe restriction upon Massachusetts mills to a head at the annual New England Conference late in November, by the suggestion of a moratorium on labor legislation permitting women workers in the textile mills of the state to work until 10 P.M. His suggestion followed a statement by Governor Ely that the State would have to lower its labor standards if other industrial states do not bring their legislation of this type into line with that of Massachusetts.

The Governor was immediately criticized by labor representatives, who interpreted his statement as an attempt to destroy the 48-hour law, and asserted that the proposal was "an attack on the standard of living in Massachusetts." The governor replied in effect that the move was rather advocated as a temporary measure to help create better conditions generally. Mr. Kendall also made it clear that he was in favor of a national 48-hour law and the elimination of women and minors from night work; that the declaration for a moratorium by Massachusetts "might indicate to other textile states that this state no longer will sacrifice itself to a condition which we should welcome nationally, and until shorter hours become effective in other states Massachusetts will not continue to sacrifice further the employment and the income of its people."

Price is a paramount issue in this region as elsewhere and the case is broadly set forth by Pepperell Manufacturing Company in its December *News Sheet*, which says in part: "Strictly speaking, a price is merely the money representative of the use or wear that may be in merchandise for sale. The degree to which a sheet or any other article returns wear or service to the consumer determines whether the original price was high or low. This is, of course, elementary, but the important fact is that during the past year and a half the constant stress upon the price of sheets has eclipsed all other considerations in the sale of them. The situation has become such that stores in many cases are merely selling a price and not sheets."

Voluntary Domestic Allotment Plan.

THE National Congress, in no way subdued by the errors of the past, exemplified by the various agricultural acts that have worked to the detriment of the farmer, seems committed to further efforts.

The new effort was expressed in the last session of Congress by several bills, chief of which was the Norbeck Bill, which after a few stormy days of consideration, was apparently killed. However, an amendment has been offered and the new bill is being paraded now as the Voluntary Domestic Allotment Plan, which, if passed, will become operative after 60 per cent of the producers of a given commodity favor it.

This plan levies an excise tax under certain provisions for redistribution for producers of certain agricultural crops in which there are surpluses.

In general this bill has four requisites:

The ascertainment by some National Board (Farm Board, Department of Agriculture or other similar organization) of probable domestic consumption.

Its distribution to the states on the basis of average acreage for the past five years and average yield for as many as 25 years back.

The allocation of a county allotment board to each of the counties of its proper share of the state allotment. The allocation by a county allotment board, assisted by local committees, to the indivdual producer of his share of the county allotment.

Some of these Domestic Allotment Plan bills are intended to place into operation a permanent non-voluntary plan. Others would make the set-up on a voluntary basis and for one or two years. All of them, however, include the principles involved in the four points noted.

The amount of domestic consumption having been determined, farmers are issued "Domestic Allotment Certificates", covering that part of their crop which will be used domestically. In cotton, these certificates have values as high as $25 per bale or five cents per pound.

The domestic mills are required in most of the bills to pay a tax direct to this National Board or to the Treasury, of this $25 per bale, on all the cotton they buy. It is assumed that this tax will be passed on to the ultimate consumer of the article manufactured by the mill.

In turn, finally, this $25 per bale tax or fee is returned to the farmer holding the "Domestic Allotment Certificate", less administrative charges, thus securing for that farmer a premium on the cotton sold domestically.

Certain tariffs are raised to prevent the importation of cotton. Other arrangements are made for the protection of mills who export cotton goods from this country so that they can get a refund on such goods of the amount of the tax originally paid.

In some of the bills farmers receiving these Domestic Allotment Certificates are required to sign an acreage reduction pledge. The pledge must be fulfilled before final payment of the certificate.

The fact that this bill is being sponsored by the Agriculture Committee of the United States Chamber of Commerce and quite a few outstanding men, and has a suggested approval of President-elect Roosevelt, according to a statement made by him in his Topeka, Kansas, speech, requires that thinking men in the textile industry, as well as in many other lines, should give serious study to the provisions contained therein.

This plan is presented to give the cotton farmer the benefit of the protective tariff system. That is its justification according to its proponents. On its face the proposal provides for the collection of five cents on every pound of cotton milled in this country from the cotton spinner or other processor, and for the distribution of the amount thus raised, less cost of administration to the individual producer of cotton. Adjustment charges paid on cotton used for the manufacture of cotton goods exported are to be refunded.

Presumably, therefore, there would be no effect on the world price of cotton, but the cost of the raw materials entering into cotton goods in this country would be increased 5 cents per pound. Since approximately two-fifths of the cotton is consumed in this country, the farmer would presumably receive an average benefit of 2 cents per pound on his entire production.

To avoid the competition of silk and rayon a tax equal to the adjustment tax on cotton is imposed on these goods. However, the tax on silk and rayon is on a poundage basis and silk and rayon will make more goods per pound than cotton.

The cotton control feature of the bill is upon an acreage reduction basis with no reference to the use of fertilizers, or other intensive methods of cultivation on the same, or the reduced acreage. These two factors alone could more than compensate for the reduction in acreage. No incentive is given to outsiders to reduce their acreage, or to replace other crops with cotton since the allotments are based on past conditions.

The second objection to this plan is that it involves tremendous administrative difficulties. It requires a National Board to ascertain the proper domestic consumption; its distribution to the states on the basis of average crop for the past five years and average yield for the past 25 years; a State Allotment Board whose duties it will be to allocate to each of the counties its proper share on the State allotment basis on acreage for the past five years; and average yield for the past ten years, county committees and local committees to allocate to individual producers their share of the County Allotment based on the average annual production over a period of five years of the land that he is farming.

Sixteen states produce cotton, eight hundred and thirty-six counties produce enough cotton to be specified by name in the Census report. It has been estimated in Texas alone over one thousand local committees would be necessary.

There are more than 17,000 gins in the United States, approximately 14,000 of which are in active operation. This means that each gin averages approximately 1,000 bales and that any records secured from them would not be so dependable.

Taking the indications of the statements made in this objection almost insurmountable difficulties arise. Another objection that is evident in any government control is the fact that this plan involves the creation of a huge bureaucratic and political machine. No matter upon what holy principles and with what sacred ambitions this governmental procedure may initiate itself, the poisonous fangs of politics are destined to penetrate the body. It is not necessary to refer to any specific example because those who are informed are already in possession of sufficient facts to substantiate this statement.

Another fact that may be presented in objection to this bill is that it provides for operation after 60 per cent of the producers have expressed a willingness to co-operate, leaving 40 per cent uncontrolled and undirected. The cotton-textile industry has found that many of their plans have been nullified with 85 per cent of the industry co-operating and 15 per cent uncontrolled. Bureaucracy and political administration has been absolutely absent in the cotton-textile industry. With these two facts injected it is safe to say that no attempt would have been made.

At the present time the cotton-textile manufacturers are agitating the necessity for an adequate tariff on jute, because jute is a violent competitor with cotton.

A flour miller recently made the statement that they are using 2,000 yards of cotton per day in their

mill, but if this excise tax should be placed upon cotton it would become necessary to use jute in its place.

This is only one statement by one man. When this is multiplied by thousands of other industries and organizations it will make a very challenging argument as to whether or not the bill in its present form will be of benefit to the farmer.

Manufacturers of the South are interested in anything that will improve the farmers' condition. They are not attacking this bill for any selfish reason, or for any particular interests. They recognize that the laboring man and the farmer must be brought into a better economic position and are in favor of any sound economic action that will improve their conditions. We seriously doubt the wisdom of the provisions of the present bill which levies an excess tax not only upon cotton but upon wheat, rice, tobacco, hogs and other commodities which may show an over-production.

It is difficult to legislate economic conditions into a wholesome operative scheme.

New Print Cloth Group.

ORGANIZATION of the print cloth group of cotton manufacturers, representing a predominant percentage of mills of this type in the South, was perfected in Greenville recently at a meeting of fifty prominent textile leaders.

The purpose of the organization is to collect statistical data and to distribute it among members to keep them informed on all trends in the industry. Limitation or control of production was not openly discussed, but sales, deliveries, etc., will constitute a vital part of the information gathered and disseminated.

Articles of the association designate management of the group to an executive committee of fourteen members, consisting of: W. D. Anderson, Bibb Manufacturing Co., Macon, Ga.; Ellison A. Smyth, Balfour Mills, Balfour, N. C.; J. C. Self, Greenwood Mills, Greenwood, S. C.; J. C. Evins, Clifton Manufacturing Company, Clifton, S. C.; F. W. Symmes, Union-Buffalo Mills, Union, S. C.; C. M. Bailey, Lydia Mills, Clinton, S. C.; W. S. Montgomery, Spartan Mills, Spartanburg, S. C.; W. B. Cole, Hannah-Pickett Mills, Rockingham, N. C.; T. M. Marchant, Victor-Monaghan Mills, Greenville, S. C.; J. P. Gossett, Gossett Mills, Anderson, S. C.; W. C. Hamrick, Hamrick Mills, Gaffney, S. C.; M. P. Orr, Orr Mills, Anderson, S. C.; E. S. McKissick, Alice Manufacturing Co., Easley, S. C.; and Ellis M. Johnston, Woodside Mills, Greenville, S. C.

Mr. Anderson was elected chairman of the executive committee at a meeting following the general conference, W. P. Jacobs of Clinton, S. C., was named secretary-treasurer.

With the organization of the print cloth group and the policies announced by it, a new feeling of optimism has come throughout the industry, in that this period of gloom gave birth to a greater spirit of co-operation, and a greater understanding of the common problems.

It now appears that the program instituted by the Cotton-Textile Institute to control the matter of mills running at night and long hours with women and minors, is going to become more popular. It also appears that when need for drastic regulation of output is necessary that such can be had with more ease than at any time in the past few years.

So strong is the belief that proper regulation of output will become possible under the new arrangement that some buyers are giving serious consideration to making longer commitments in spite of the uncertainties rising from debt discussions, lower cotton and unsettled financial matters of some particular importance.

COMMENT ON THE COTTON MARKET

New Orleans, December 14th, 1932.

UNTIL of late the trend of the cotton market remained downward, new low prices for the downward movement having been recorded on Bureau Day. Depressing influences were December liquidation, larger crop estimates, further weakness in sterling, in the New York stock market, and the unsatisfactory progress of negotiations regarding December war debt obligations.

Of late, however, there has been some trade buying and not a little of short covering, due to the recent recovery in sterling, a firmer stock market, expanding domestic consumption, and because of anticipated constructive measures in Washington in the interest of agriculture and higher prices for farm products.

As a climax to the close of the crop estimating season, which was noted for many surprises in the way of several monthly consecutive increases as to the indicated yield, the government's annual cotton crop estimate showed a further surprisingly large addition to the year's production, which, however, because of the already very low level of values and prospects for constructive legislation in Washington, failed to depress prices very much. Meanwhile, as a matter of fact, values recovered much of the recent loss.

As was the case during the past few months as regards the crop, the government apparently underestimated the acreage in cultivation as of July 1st, recent returns showing the acreage planted to have been 38,227,000 acres versus the original estimate of 37,290,000, of which was left for harvest 37,589,000 acres versus earlier estimates of 36,611,000. These features and a somewhat larger yield per acre than as of November 1st—162.1 lbs. against 156.2—are evidently accountable for the larger crop than was generally expected.

GOVERNMENT COMPARATIVES

December 8th—	This year	Last year	
Acreage in cultivation July 1st, acres	38,227,000	41,189,000	(final)
Acreage left for harvest	37,589,000	40,693,000	"
Estimated crop, bales of 500 lbs. gross weight	12,727,000	17,096,000	"
Average yield per acre, lbs.	162.1	201.2	"
Ginned to December 1st, counting round as half bales	11,631,361	15,018,403	

SEASON'S INDICATED WORLD'S SUPPLY OF AMERICAN LINT COTTON

Bales—	This season	Last season
World's carry-over August 1st (Hester)	12,911,000	8,710,000
Indicated crop, government estimate	12,727,000	17,096,000
Total, about	25,638,000	25,806,000

As noted by the comparative totals, the season's indicated world's supply of American is about the same as it was last season, and it seems as if something must be done in the way of enacting constructive legislation in the interest of a smaller acreage and higher prices next year. It would seem to be imperative for the South to make a further reduction in the acreage next spring if the producer is to profit from his toil.

As to world's consumption of American lint, some encouragement is derived from a recent estimate for the three first months of the season, which is 3,319,000 bales versus 2,996,000 for the corresponding period last season.

But the season's indicated world's supply of all kinds

was recently estimated at 40,505,000 bales versus 40,481,000 last season, while the supply remaining unconsumed on October 31st, including unpicked portions of crops, was estimated at about 34,682,000 against 34,707,000.

BRITISH BOARD OF TRADE REPORT FOR NOVEMBER

Year—	1932	1931	1930
Exports of yarn, pounds...	10,000,000	12,000,000	11,000,000
Exports of cloth, yards	159,000,000	126,000,000	130,000,000

This is a favorable showing as to shipment of cloths, and as the Lancashire labor troubles have been settled, there is the probability of Manchester improving, especially with possessions within the Empire.

CENSUS REPORT FOR NOVEMBER

United States— Bales—	This season	Last season
Consumption of lint, November	503,722	425,228
Consumption of linters, November	52,325	53,967
Consumption including linters, November..	556,047	479,195
Consumption of lint, 4 months	1,900,222	1,775,616
Consumption of linters, 4 months.....	219,208	242,358
Consumption including linters, 4 months...	2,119,430	2,017,974
Mill stocks November 30th	1,456,913	1,446,941
Stocks in public storage and warehouses November 30th	10,677,362	10,704,371
Stocks in mills, public storage and warehouses November 30th.....	12,134,275	12,151,312
Stocks in mills, public storage and warehouses October 31st	11,093,691	10,568,725
Active spindles during November	24,349,506	24,870,182
Active spindles during October	24,287,732	25,200,056

Inasmuch as the world's consumption of American for the first three months of the season was somewhat larger than for the corresponding time last season, the further gain over last year in the domestic consumption during November, is helpful. But some Russian cotton has been arriving at Liverpool, and it will not be long before the weight of the movement of the East Indian crop, which is estimated at about 4,200,000 bales versus 3,400,000 last year, will likely be felt, especially in the Orient.

As regards the present cotton situation in the South, late advices are to the effect that trade is dull, there being some demand but not urgent and not for large quantities, mills of the world being on a hand-to-mouth policy and see no urgent necessity to cover more than their immediate requirements.

WHAT THE SOUTHERN MILLS ARE DOING . . .

Lowe Manufacturing Co., Huntsville, Ala., which closed some time ago, has been purchased by the Comer interests of Birmingham, who operate the Avondale Mills. The Lowe properties were purchased from the receiver for $286,000, including a $37,000 lien. The mill has 27,000 spindles and 600 looms. The company's liabilities were listed in the receivership proceedings at $2,055,000. The Comer interests also recently purchased the LaFayette Cotton Mills, LaFayette, Ala.

J. Spencer Love, of Burlington, N. C., has completed the merging of his plants located in Burlington, into Burlington Mills Co. The merger includes the following organizations: Burlington Mills, Inc.; Holt, Love & Smith, Inc.; North Carolina Silk Mills, Inc.; Sherwood Tapestry Mills; Alamance Weaving Co.; and the Piedmont Weavers, Inc. Mr. Love is president; W. J. Carter, M. B. Smith, Jr., and T. H. Burkhardt, vice-presidents; E. H. Wilkins, secretary, and R. M. Reid, treasurer.

The Ray-Ser Dyeing Co., Chattanooga, Tenn., is installing new machinery which will more than treble the output of the plant, according to Frank Cater, president.

Charter has been issued to Carter Mills No. 1, Inc., Lincolnton, N. C., and Carter Mills No. 2, Inc., Taylorsville, N. C.—both yarn plants. Subscribing to the stock were A. B. Carter, A. Dewey Carter, Ed S. Kempton and E. H. Gregg, of Gastonia, N. C.

Improvement work at the Manchester plant of Callaway Mills, Manchester, Ga., includes the installation of 24 cards; changing 73 spinning frames to long draft; a new roof on a part of the mill; and replacement of all wood window sash with steel sash of the latest type.

Fine Goods Mills See Better Business.

Fine cotton goods mills are looking forward with confidence to the continuation next spring and summer of the vogue for cotton in women's wearing apparel, according to George A. Sloan, president of the Cotton-Textile Institute of New York City, in Boston recently at a meeting with mill executives in this important branch of the industry. Mr. Sloan declared that recent surveys among style authorities in Paris, New York and other fashion centers emphatically indicate a further extended popularity for cottons, which are already being featured in Palm Beach and winter cruise wearables now being shown to retail store buyers.

In referring to the coming spring as one that will be notable for the revival of many familiar favorites of other years, Mr. Sloan mentioned ginghams, etamines, organdies, voiles, seersuckers and fine crepes as having definitely returned to favor. Substantial advances in the styling of these fabrics characterize the 1933 versions. Brocaded effects on sheer voiles, marquisettes, organdies and related constructions are a note of especial interest. A variety of novelty weapes has been introduced to distinguish the popular new metalasse materials.

A manufacturing refinement of important influence in restoring public favor for cottons is the success achieved in overcoming the problem of shrinkage control. By chemical and mechanical processes in finishing, dress goods and other materials may now be given a measured shrinkage which is accurately predetermined by washing tests as equivalent to that of laundering.

Notwithstanding the heavy production of the goods, the unfilled orders now on hand are about 70 per cent greater than a year ago and about 60 per cent greater than two years ago. At the same time inventories have been greatly reduced; stocks have been reduced to one-half of the volume last summer and are at approximately the low point for the last four years. It was the general feeling of mill executives present at the meeting that the preservation of the present low inventory position would constitute a most constructive contribution toward market improvement.

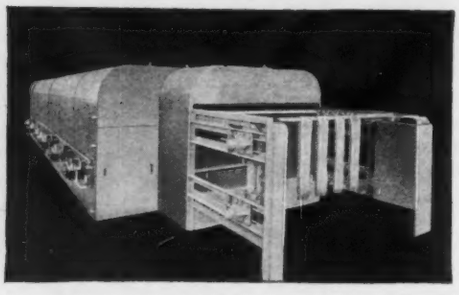
The meeting was held at the Copley-Plaza Hotel, 90,000 looms being represented. Those present included: R. T. Stevens of J. P. Stevens & Company, Colonel G. Edward Buxton of B. B. & R. Knight Corp., G. H. Milliken of Deering Milliken Company, H. H. Burton of Slater Mills, Russell H. Leonard of Pepperell Mfg. Company, Homer Loring of United Merchants & Manufacturers, J. H. McMahon of Berkshire Fine Spinning Associates, A. W. Dimick of Grosvenor-Dale Company, Morgan Butler of Hoosac Mills Corp., D. Duncan of Lonsdale Company, Henry F. Lippitt of Manville Jenckes Company, Frank I. Neild of Neild Mfg. Company, W. T. Bell of Hunter Mfg. & Commission Company, L. W. Carpenter of Spencer Corp., Robert Amory of Nashua Mfg. Company, W. E. Barrett of Maverick Mills, Ralph Perkins of Pilgrim Mill, F. A. Flather of Boott Mills, Paul Whitin of the Paul Whitin Mfg. Company, N. F. Ayer of Cabot Mfg. Company, W. F. Staples of Lawton Mills, C. O. Richardson of Warwick Mills, Harold C. Field of Aldrich Bros. Company, J. Linzee Weld and Percy Howe of Suncook Mills, Arthur M. Allen of Baltic Mills, David Rosenthal of Cohn-Hall-Marx, Jewett B. Newton of Androscoggin Mills, Russell T. Fisher of the National Association of Cotton Manufacturers and Andrew Raeburn of the Fine Cotton Goods Exchange.

New Textile Equipment and Publications . . .

New Sargent Skein Dryer.

A newly designed machine for drying fibrous materials in skein form has recently been marketed by C. G. Sargent's Sons Corp., Graniteville, Mass. The machine is constructed of easily erected sections furnished in any length and in a number of widths, being built also to accommodate various size skeins. The housing is constructed of readily removable top and side panels, making the interior of the dryer accessible for inspection and cleaning. The panels are of double steel casings between which is an ample thickness of insulating material. When in position the panels are sealed with suitable asbestos material to avoid all metal-to-metal contacts and to reduce heat loss.

Latest type heaters are used, being so arranged in the drying chamber as to eliminate uneven temperature conditions, the manufacturers explain, who point out also that these units have an efficient economical operation and require small space due to compact construction. As in other late design Sargent dryers, the unit is equipped with centrifugal fans specially constructed for skein drying. Each fan is direct-connected to a motor, to provide a constant volume of air. The air volume is regulated by simply turning off or on a number of fans.



A view of the recently announced improved skein drier described here . . . .

A suitable conveying chain and poles are used to carry the skeins through the drying chamber. There is an automatic feeding device at the point where the poles are placed in the conveyor to make proper placement certain. At the delivery end of the dryer is an extension or storage rack to take the poles from the dryer, to give the operator ample time for feeding and doffing the poles.

The conveyor drive is completely guarded, and equipped with variable speed control motor, providing for a wide range of variations as well as fractional changes in the conveyor speed. Air deflectors properly placed and automatically operated exhaust ducts provide controlled air currents, the manufacturers point out, adding that the air flow is especially even and constantly maintained at an even temperature as well as moisture content.

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Catalog on Sonoco Products.

Sonoco Products Company, Hartsville, S. C., manufacturers of paper cones, parallel tubes, spools, and paper specialties, have just published their first catalog, which is a most attractive and useful volume. It gives first an interesting outline of the romance of the development of the company over a period of more than thirty years of service, largely as an adjunct to the southern textile industry. In addition, a most complete and attractively presented catalog of the company's varied line of paper products, with detailed specification information, is included.

Circulars on Fire Hose.

Two circulars on its new flat cured fire hose have been issued by the B. F. Goodrich Rubber Co., Akron, Ohio. One is titled "The Fire Hose That Folds", the other "The New Fire Hose is Flat".

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Catalog on Dilecto.

An interesting catalog describing Dilecto, a laminated synthetic material, has been issued by Continental Diamond Fibre Co., Newark, Del. The purpose of the book is to acquaint industrial men with the properties of Dilecto, its manufacture, and its uses. The use of synthetic resinous materials in industry, and particularly the development of laminated phenolic products, has been of interest. This product of the Continental-Diamond Fibre Co., introduced in the early days of the industry and developed with the demands of engineers and designers, is fully described in the booklet, which covers also its manufacture, and lists many uses to which it is being put in industry.

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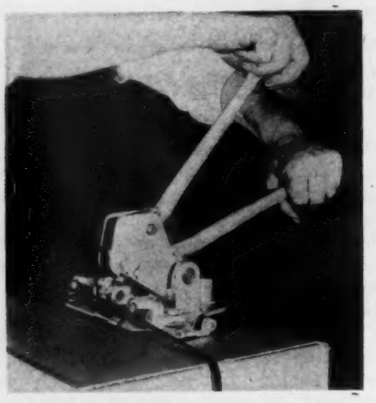
New Combination Strapping Tool.

A single strapping tool incorporating stretching, sealing and cutting mechanism is being marketed by the Acme Steel Co., 2840 Archer Ave., Chicago, Ill. This new tool, it is claimed, reduces strapping operations to an exact science. Strapping time is reduced, depending upon the nature of the job, from 50 to 100 per cent, because of the elimination of many motions formerly required. In operating the combination tool, shown in the accompanying illustration, the seal is snapped into the mouth of the sealer and the band is inserted in the tool. Then one stroke of the stretcher lever tightens the band, and one stroke of the sealer lever applies the seal, seals it, and cuts the band from the coil. When these operations are completed, the tool still retains the loose end of the band so it will be right at hand for the next package.



Combination strapping tool

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Carolinians Secure Patents.

Through Paul B. Eaton, patent attorney, Charlotte, N. C., C. E. Honeycutt and J. L. Alexander, of Gastonia, N. C., have secured a patent on method and means for refluting textile rolls, for bringing the flutes back to their original shape. M. E. Pierson, Charlotte, N. C., has secured through Mr. Eaton, a patent on a hosiery inspection device which is operated by compressed air instead of by hand operation.

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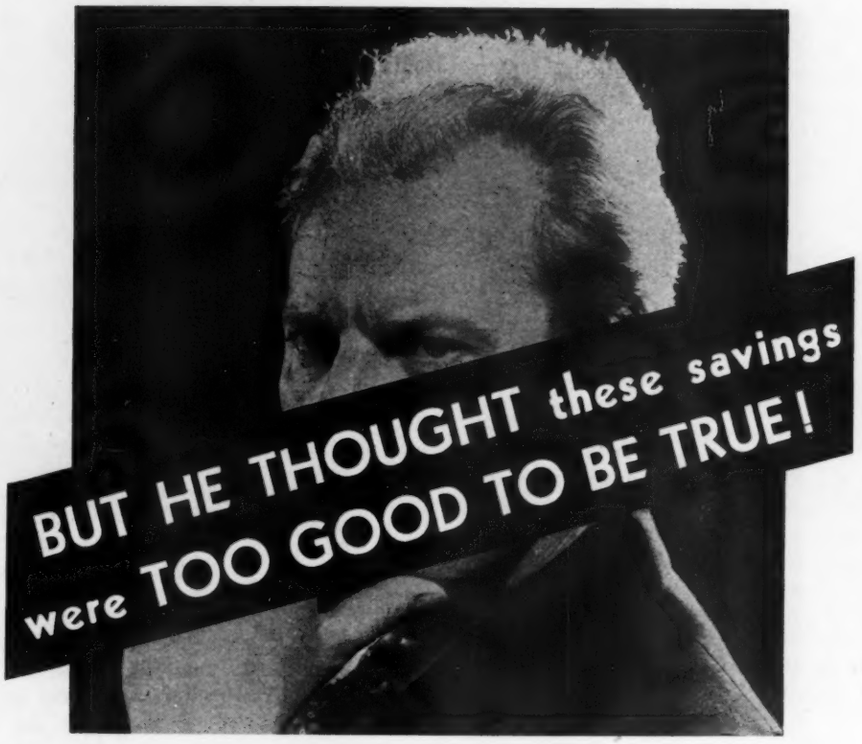
New Reeves Booklet.

Reeves Pulley Company, Columbus, Ind., manufacturers of Reeves variable speed transmission, have issued Bulletin T-5645, which gives much information regarding the application of automatic variable speed control to machines in the textile industry and

This MILL OWNER *ALMOST* SAVED $5,560.00



. . . and so we make you this offer:

In our files we have accurate cost records, kept by mills of all types, showing cash savings averaging over 60% after Armstrong's Seamless Cork Cots were installed.

Over 100 of the largest mills in the country (25% of the industry's total) have adopted Armstrong's Seamless Cork Cots as standard. Over six million spindles are already on cork and this number is growing daily, as fast as replacements permit.

Our offer is simply this: Find out for yourself why mills can make these enormous savings. You have nothing to lose and everything to gain. Put in a few test frames on Armstrong's Seamless Cork Cots. See why mill owners have not only saved money, but improved operating conditions . . . Why changing humidity conditions affect cork less . . . Why clearer waste is noticeably decreased . . . Why less trouble is experienced with hard ends . . . Why strength and evenness of yarn is equalled or bettered.

Buy on the proof you get in your own mill. Today, *now*, investigate Armstrong's Seamless Cork Cots, the *proved* cork roll covering. Send for your copy of "The Facts about Armstrong's Seamless Cork Cots." Read the actual cost studies made by the mills themselves.

Armstrong's (A) Product

Armstrong's SEAMLESS *Cork Cots*

For Spinning and Card Room Rolls

Armstrong Cork & Insulation Co.
923 Arch Street, Lancaster, Penna.

I would like to know how I can prove these savings in my mill. Please send me without obligation your book, "The Facts about Armstrong's Seamless Cork Cots."

Name .....

Firm Name .....

City ..... State .....

in many other fields. It describes the Reeves extended lever type mechanical automatic control, and the Reeves electric automatic control.

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Booklet on Stainless Clad Steel.

The Ingersoll Steel and Disc Company (a division of Borg-Warner Corporation), 310 South Michigan Ave., Chicago, Ill., have issued a folder describing the composition, method of manufacture and fabrication of Ingersoll stainless clad steel as well as illustrating and listing many applications for this new corrosion-resisting material.

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New Atwood Booklet.

Atwood Machine Co., Stonington, Conn., have issued a new booklet illustrating and briefly describing the principal items in the Atwood line of silk and rayon throwing machinery. Among the items covered are "Stonington" winder, 5 B doubler-twister, "Monarch" twister, "Utility" twister, "Advance" redraw, Atwood wire swifts, various types of 5B feed rolls, the "Ball Top" spindle, repair parts and accessories.

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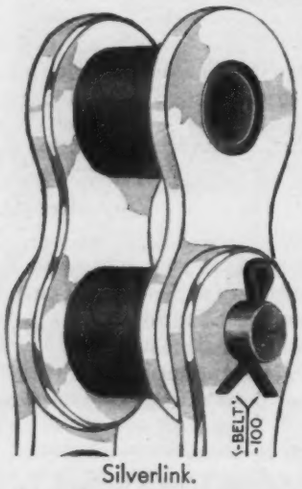
Silverlink Roller Chain.

Link-Belt Company, 910 S. Michigan Ave., Chicago, Ill., have announced the development of the Link-Belt Silverlink roller chain, in which the side bars are especially treated to resist corrosion, giving them the appearance of silver. The chain is made in all sizes from ⅜-inch to 2½-inch pitch, and in single and multiple widths. It is available



Silverlink.

with wheels, for any horsepower, also with conveying attachment links in wide variety; and complete drives are carried in stock by distributors in sizes up to 225-hp., in speed ratios of 1:1 up to 8:1. The construction features of the chain are enumerated as follows: Sidebars of alloy rolled steel heat-treated for strength and toughness, and especially treated to resist corrosion; nickel steel case-hardened pins, detachable type with cotter or furnished riveted; solid steel case-hardened bushings; alloy steel heat-treated rollers; and uniformity and close clearances throughout.

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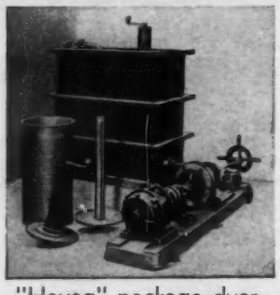
Haveg—An Acid and Corrosion-Resistant Material.

"Haveg", a product resistant successfully to acids and chemicals, is being manufactured and marketed in this country by the Haveg Corporation, Newark, Del., affiliated with the Continental Diamond Fibre Co. It was introduced in Germany about 8 years ago and has found wide use in Europe.

"Haveg" piece dyer.

It is of especial interest in the textile industry for use for tanks, vats, etc., in wet processing, especially dyeing. A plant for its production has been erected at Marshallton, Del.

This material is produced by using a selected asbestos base and combining it with a modified form of phenol-formaldehyde type of resin. This in turn is molded into a compact mass, providing a material completely resistant



"Haveg" package dyer.

throughout, it is explained. In the mold the mass is subjected to heat and pressure, and forced into a single solid piece of the shape and size desired. Haveg tanks have been made as large as 10 feet in diameter and 10 feet in height, it is stated.

Haveg is about one-fifth the weight of iron and about one-half as heavy as aluminum, it is explained, and has a compressive strength of 10,400 pounds per square inch. The manufacturers state that during the 8 years of its use abroad, it has proven an ability to withstand blows and shocks and does not easily chip or fracture.

It is further stated that temperature changes apparently have little effect on the material, the regular grade being used up to 265 degrees F. Since the material is non-absorbent, it is explained, tanks, vats, kettles, etc., may be flushed out with a hose and water. Due to a low co-efficient of heat conductivity, it is pointed out, a saving in steam required has been effected by dyeplants using Haveg equipment before it was installed.

The corporation lists the following as acids to which the material is resistant: acetic, hydrocromic, lactic, oxalic and phosphoric (any concentration); hydrochloric, any concentration and temperature; sulphuric, up to 50 per cent; formic, up to 40 per cent; fatty acids; sulphurous; tannic and tartaric. Eight bases, 7 solvents and 32 chemicals are also listed.

H. W. Butterworth & Sons Co., manufacturers of textile finishing machinery, Philadelphia, Providence, and Charlotte, have been appointed exclusive Haveg distributor in the textile industry.

:: :: ::

New Cycle Package Dyeing and Drying Machine.

American Obermaier Corporation, 20 Hunters Point Ave., Long Island City, N. Y., have announced a new cycle package dyeing and drying machine, in which, it is pointed out, the packages are dyed and dried on the same material carrier within two and a half hours. The new process, on which patents are applied for, is said to eliminate all necessity of hydro-extracting, dispensing with the labor and investment in hydro-extractors, and keep the package in the same form after dyeing and drying as it was originally. It is further stated that aside from labor saving, a factor is that dyed yarn ordered in the morning may be delivered dried in the afternoon of the same day. More information will be available later regarding this new machine, the manufacturers advise.

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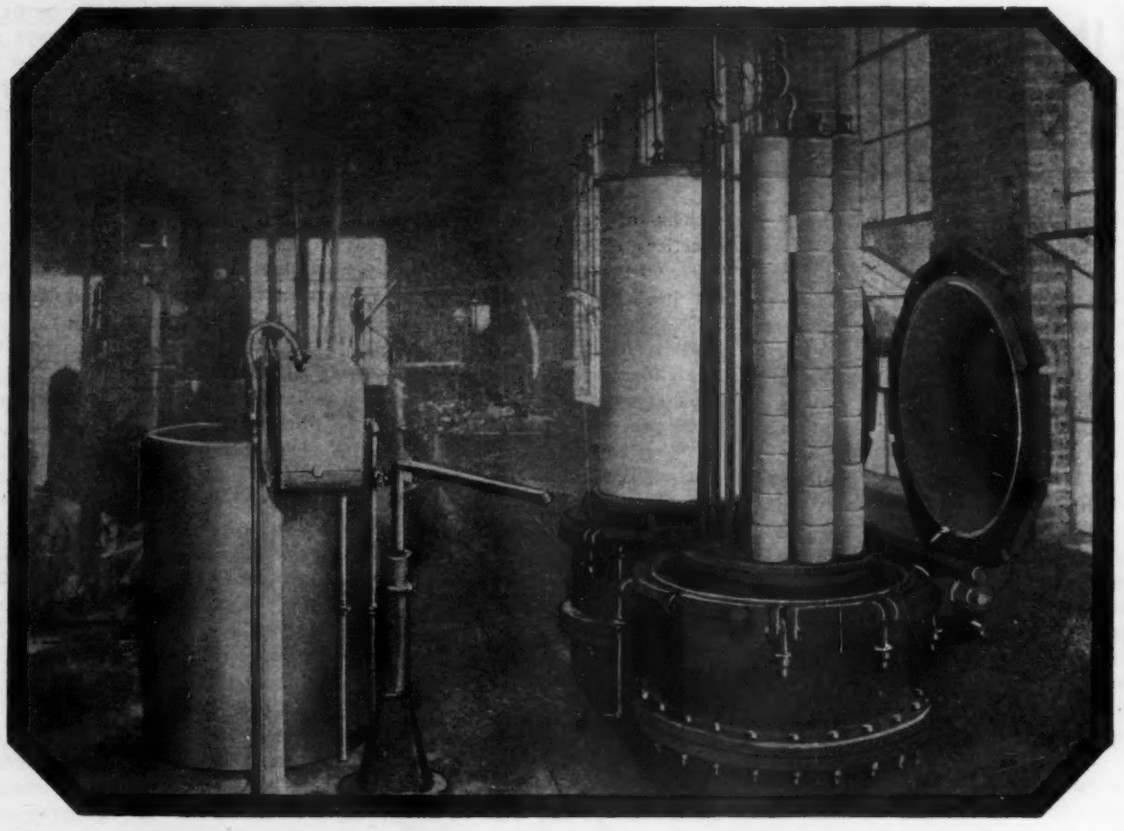
New Pontamine Dyestuff.

Pontamine Fast Orange 7R, a direct color slightly redder in shade than Pontamine Fast Orange ER, has just been announced by the Dyestuffs Division, E. I. du Pont de Nemours & Co., Wilmington, Del. Its property of dyeing cotton and leaving wool white when speck dyed is said to make it an extremely useful color for the dyer of union materials. When speck dyed in full shades Acele effect threads are stained a trace and silk effects are left white. It is very soluble and level dyeing, and may be used on all types of machines, it may be economically applied to raw stock, yarn or piece goods for fast to light shades, it is pointed out.

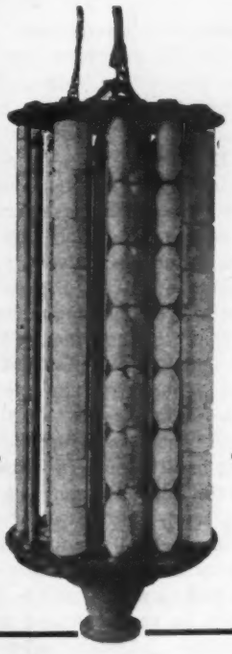


Eliminate Raw Stock Waste in Dyeing

Many users of GASTON COUNTY DYEING EQUIPMENT are eliminating raw stock waste, by dyeing their roving stock direct from the roving frames.

This is another new and exclusive feature of GASTON COUNTY DYEING EQUIPMENT, and a feature that no other manufacturer can offer.

With this equipment, you can run colored yarns through your mill, the same as you are now running white yarns, with only one step out of line at your roving frames to do your dyeing, after which you proceed in the usual way.



You can readily appreciate the saving in cost this method affords, and in addition to this, it puts you in a position to ship orders large or small within 24 hours after they are received.

Let us tell you more about it—Write or wire us today.

INVENTORS AND MAKERS OF

Beams and machines for Beam Drying, Beam Winding, Beam Dyeing, Package Dyeing, Package Drying, Bleaching on Beams and Packages, Roving Dyeing, Roving Drying.

IMPORTANT

We want to again emphasize the fact, that with our machine you are not confined to any one type of dyeing. With our machine, you can dye yarns on beams, yarns on tubes, yarns on cones or roving direct from any size roving frame. It is the most flexible unit on the market.

GASTON COUNTY DYEING MACHINE COMPANY

Manufacturers of Combination Dyeing and Combination Drying Machinery

Main Office and Plant, STANLEY, NORTH CAROLINA

Address all communications to our main office.

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Bristol Opens British Factory.

The Bristol Company, Waterbury, Conn., has established a British factory at London, England, under the name of Bristol's Instrument Company, Limited, incorporated under the Companies Act 1929. Since 1889 The Bristol Company has enjoyed a substantial trade with Great Britain, in its complete line of recording instruments, its selling activities in that country being handled by J. W. & C. J. Phillips, Ltd., as sales agent. Although the general expansion program of the company contemplated the founding of a British plant at some time in the future, the altered economic and business situation within Great Britain made an earlier establishment for manufacturing in that country advisable. Howard H. Bristol, president of The Bristol Company, is chairman of the board of directors of the British company, and Alexander L. Dugon, of J. W. & C. J. Phillips, Ltd., is vice chairman and managing director.

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Moore-Handley Appointed Link-Belt Distributor.

Moore-Handley Hardware Co., 25 South 20th St., Birmingham, Ala., have been appointed distributors and direct representatives for the Link-Belt Company's entire line of elevating, conveying and power transmitting machinery in the Birmingham territory. They carry a suitable stock of Link-Belt chains, gears, sprockets, transmission machinery and screw conveyors, including complete silent chain and "RC" roller chain drives.

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1932 Edition of A. S. T. M. Tentative Standards Book.

The Book of A. S. T. M. Tentative Standards, 1932 edition, has just been issued by American Society for Testing Materials, 1315 Spruce St., Philadelphia, Pa. Each year the book includes all of the tentative standards in effect at the time of publication. The term "tentative" is applied to a proposed standard, given approval throughout the various steps of A. S. T. M. procedure, and which is published for one or more years to elicit comments and criticisms, of which cognizance is taken before it is formally adopted and issued as an A. S. T. M. standard. The 1932 book includes all of the 226 tentative specifications, test methods, definitions of terms and recommended practices effective as of October 31, 1932. Of this number, 47 were accepted for publication for the first time in 1932. The list covers a wide range of industries and businesses, there being 14 standards for textile materials. The book is available in cloth binding at $8.00 per copy; heavy paper binding, $7.00—either from the Society or through COTTON.

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Houghton Opens Charlotte Office.

E. F. Houghton & Co., of Philadelphia, Pa., have opened an office in the First National Bank Building, Charlotte, N. C., for providing better service to Houghton customers in the southern territory. The company has as representatives, H. J. Waldron, with headquarters at Greensboro, N. C.; R. J. Maxwell, with headquarters at Greenville, S. C.; and D. O. Wylie, with headquarters at Charlotte. The new district office will serve the customers in the Carolinas section in addition to the personal services of these district representatives.

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"Industrial Management In This Machine Age."

An interesting book under the title "Industrial Management in This Machine Age", by Francis A. Westbrook, M. E., has just been published by Thomas Y. Crowell Company, New York. The author has spent practically all of the time since his graduation from Columbia University in 1906 in various industrial plants, in management and engineering work. He points out that "the machine age" has brought new and complex problems to management in industry, and proceeds to describe, from first-hand knowledge and observation, the successful methods being used by modern industrial plants. His findings are presented, not in textbook style, but by use of the illustration method. The quote the publishers: "He constantly cites cases where such-and-such practices are in vogue. As a result, he has presented an extremely valuable industrial document — one which will, by reason of its data, instantly attract the student of economics or management both in and out of college; and one which, at the same time, cannot be overlooked by the careful plant manager or executive who wishes to avail himself of the best current practice, or to profit by the mistakes of others who have gone before." The price of the book is $3.50 per copy, and it may be secured from the publishers or through COTTON.

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Stevenson and Burgess Handling Mill Supplies.

T. B. Stevenson and C. A. Burgess have formed a partnership and are handling a broad line of mill supplies. Mr. Stevenson is a well known cotton mill superintendent, and C. A. Burgess was for many years connected with the American Moistening Co. Both men have an extensive acquaintance among the mills. They are handling belting, loom harness and strapping, picker sticks and wooden supplies for looms, crayons, brooms, fiber and wood spools, clearer rolls, and speeder and spinning bobbins. Mr. Stevenson's headquarters are at 501 N. College St., Charlotte, N. C., and Mr. Burgess' headquarters are at 108 Jones Ave., Greenville, S. C.

:: :: ::

More About American Baling.

Poor baling of American cotton is an old story well known to every cotton exporter. The subject, however, has arisen again in the China market, as is evidenced by a cablegram received from Commercial Attache Julean Arnold, Shanghai, by the Charlotte District Office of the Bureau of Foreign and Domestic Commerce. Mr. Arnold cables:

"American cotton exporters shipping standard size American bales of cotton in China should be cautioned against bales arriving with cotton badly exposed which is adding seriously to fire risks and making losses to importers.

"During the past fourteen weeks Shanghai experienced three serious fires in American cotton cargoes and losses were said to be greatly enhanced because of bad packing. Out of any lot of 100 American bales selected at random the majority have broken bands and badly torn covering leaving loosened contents exposed and frazzled. Future American cotton business believed jeopardized by careless packing."

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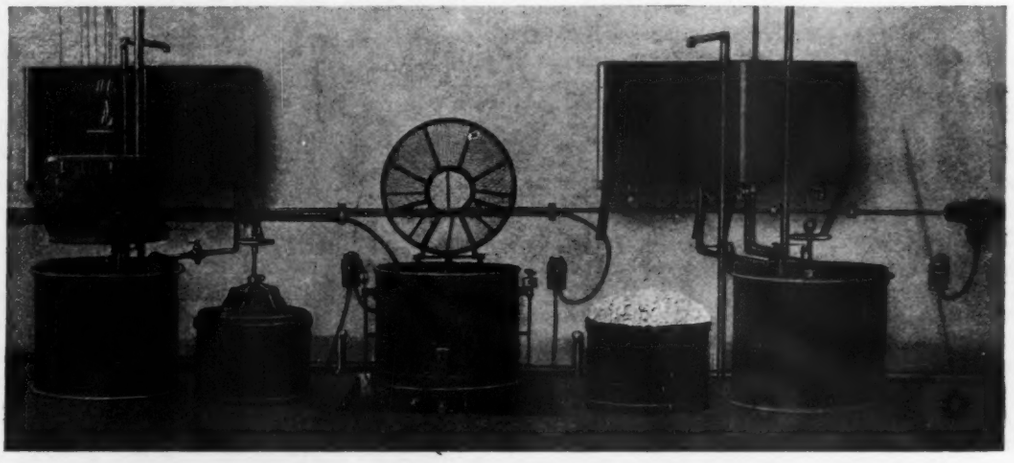
Stulz Forms Titan Chemical Products, Inc.

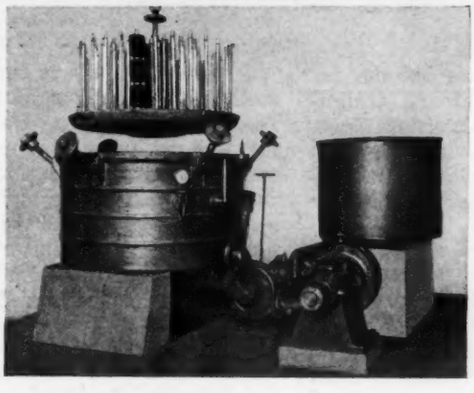
Harry J. Stulz, well known among the textile plants, who resigned his connection with the United Chemical Products Co., has organized the Titan Chemical Products, Inc., Mill Road and Wayne St., Jersey City, N. J., of which Mr. Stulz is president. The concern manufactures dyestuffs, sizing, softening and finishing materials and sulphonated oils. Sales representatives are located at Atlanta, Ga., and Paterson, N. J.

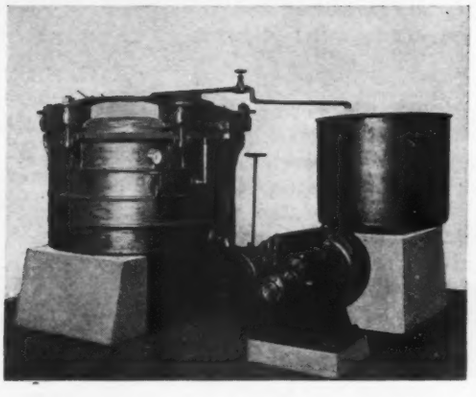
Obermaier

REG. U. S. PATENT OFFICE

Universal Dyeing Machine Model "UKSAG"







A Most Flexible Unit For Any Dyehouse.

All of the Following Work Done on the Same Machine:

RAW STOCK Dyeing; or
SLUBBING or ROVING Dyeing; or
PACKAGE Dyeing on Standard 6" Tubes.

PLEASE INVESTIGATE

AMERICAN OBERMAIER CORPORATION

11-20 FORTY-NINTH AVENUE LONG ISLAND CITY, N. Y.

PERSONAL NOTES
about Men You Know

FREDERICK B. GORDON, president since its organization by himself and associates in 1900 of the Columbus Manufacturing Co., Columbus, Ga., has resigned from this position in order to retire from active business because of advancing age. The board of directors accepted his resignation in December, and elected D. A. TURNER, president of the Eagle & Phenix Mills of Columbus, to succeed Mr. Gordon.

LOUIS M. CARPENTER has become vice-president and general manager of the Spencer Corporation's group of mills, with headquarters at Spindale, N. C., succeeding GEORGE SUMMERSBY, who has become president of Bradford Dyeing Associates, U. S. A. Mr. Carpenter was for a number of years treasurer of the Ashland Cotton Co., Jewett City, Conn., and is one of the pioneers in the development of rayon weaving.

FAY H. MARTIN, former manager of the Woonsocket Machine & Press Co., and now connected with the Belger Co., Watertown, Mass., and Mrs. Martin celebrated their 50th wedding anniversary recently. Mr. and Mrs. Martin were the recipients of several golden gifts and many cards and letters of congratulations. A dinner was served to relatives and a few close friends; among those present was LOREN W. PENNY, formerly of Saco-Lowell Shops.

HENRY G. HESTER, secretary and superintendent of the New Orleans Cotton Exchange over a period of 61 years, retired on December 7th. Colonel Hester, known as the "Father of Cotton Statistics," is the most prominent figure internationally in the American cotton markets. He was honored with the title of secretary-emeritus, and will continue to act in an advisory capacity. HENRY PLAUCHE, for years Colonel Hester's assistant, was named to succeed him as secretary and superintendent.

WALTER F. PERKINS recently resigned as manager of the Harrison, N. J., Works of the Worthington Pump and Machinery Corp., to become vice president and general manager of The Bartlett Hayward Co., Baltimore, Md. He is succeeded as works manager at Harrison by HUGH BENET, who was formerly manager of Worthington's Holyoke, Mass., Works.

H. W. ROSE, for the past several years southern sales manager of The Viscose Company, with headquarters in Charlotte, N. C., has been promoted to a position in the New York office of the company, where he will have charge of branch office relations and assist the general sales manager. HARRY I. DALTON has been promoted to southern sales manager.

J. V. THOMASON has been made superintendent of the Fountain Mills, Tarboro, N. C. He was formerly overseer of weaving at the Hart Mills, Tarboro.

G. G. SIMMONS has become assistant superintendent and designer at the Watts Mill, Laurens, S. C., succeeding W. N. ROBBINS, who has become associated with J. P. Stevens & Co., selling agents, in New York City.

C. T. LITTLEJOHN has been made overseer of weaving at the Watts Mill, Laurens, succeeding P. C. PEARCE. BERT KENNINGTON is overseer of the silk room, and D. R. PEARSON is night overseer of weaving.

G. T. BOSTIC has become overseer of carding and spinning at the Charles Mill Co., Red Spring, N. C.

JULIAN T. CHASE has been made southern manager of the National Aniline & Chemical Co., with headquarters in Charlotte, N. C., to succeed the late W. H. WILLARD. Mr. Chase formerly represented the company with headquarters in Atlanta. JAMES T. WHITE has been transferred to Atlanta succeeding Mr. Chase, and D. S. MOSS succeeds Mr. White in the Charlotte office.

B. R. COLE has been made manager of the Opp Cotton Mills and Micolas Cotton Mills, Opp, Ala., which position was formerly held by his father, the late C. H. COLE.

E. S. TILLINGHAST has become superintendent of bleaching, Russell Manufacturing Co., Alexander City, Ala. He was formerly assistant superintendent at the Fairforest Finishing Co., Spartanburg, S. C.

L. A. BRYAN has become overseer of weaving at the Opp Cotton Mills, Opp, Ala. He was formerly overseer of weaving at the Crawford Cotton Mills, Crawford, Ga.

ROBERT NICHOLAS has resigned his position with the U. S. Finishing Co., Hartsville, S. C., to become associated with the selling organization of the Ware Shoals Manufacturing Co., of Ware Shoals, S. C.

Obituary.

LAWTON P. DUNCAN, superintendent of the Inman Mills, Inman, S. C., and general superintendent of the Riverdale Mills, Enoree, S. C., passed away at a Spartanburg hospital on Saturday night, December 10th, following a week's illness of pneumonia. Mr. Duncan, one of the leading younger operating executives of the industry, was 32 years of age. He was born in Perry, Ga., and was a graduate in textile engineering of the Georgia School of Technology, Atlanta, Ga. He is survived by twin daughters, Vivienne and Virginia, age seven; his mother, two brothers and four sisters. His wife passed away in November 1931 as a result of an automobile accident in which Mr. Duncan was seriously injured.

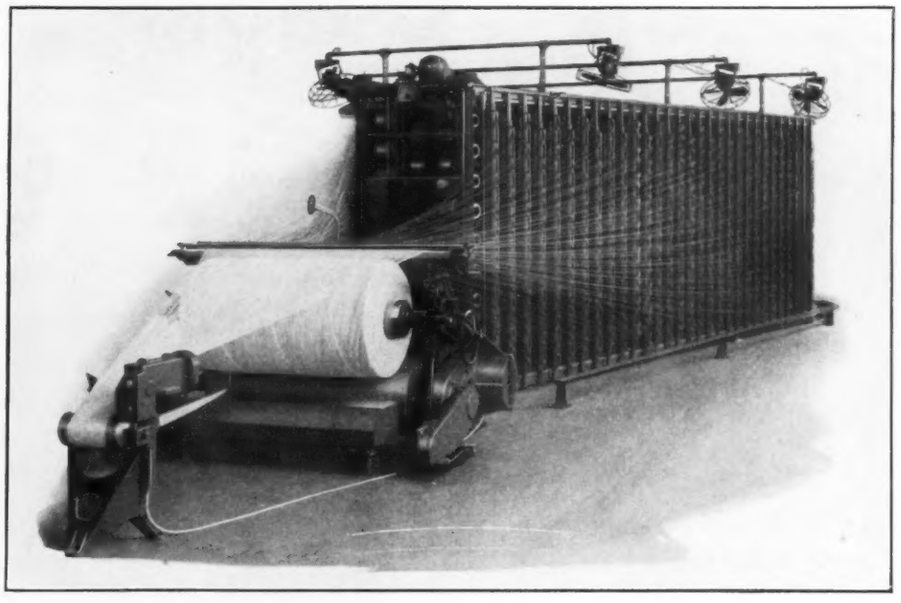
I. T. HARVEY, superintendent of the Washington Manufacturing Co., Tennille, Ga., died suddenly in an Atlanta hotel on November 27th. Interment was in Langley, S. C.

R. L. BURRUS, overseer of weaving at the Eva Jane Mills of Avondale Mills, Sylacauga, Ala., died recently at the age of 51 years.

C. L. LYTTON, since 1919 superintendent of the Flint Mills, Gastonia, N. C., died on December 8th in a Charlotte hospital, following an attack of appendicitis. He was 47 years of age.

T. M. MCENTIRE, for many years superintendent of southern cotton mills, died on November 20th, at Bessemer City, N. C. He was 58 years of age, and a past-president of the Southern Textile Association. He had been superintendent of the Loray Mill, Gastonia, and the Rhodhiss Mills, Rhodhiss, N. C.

Super-Speed
BALL or BEAM WARPER



Super-Speed Warper with Balling Attachment

BALLING SPEED
700 Y. P. M.

BEAMING SPEED
900 Y. P. M.

Super-Speed Ball Warpers can be used for winding beams without removing balling attachment.

Winds balls weighing as much as 500 pounds permitting increased yardage and greater efficiency in dye house and beamer room.

The advantages of low tension, creeling while in operation and high production apply equally to the running of both balls and beams.

Another example of FLEXIBILITY

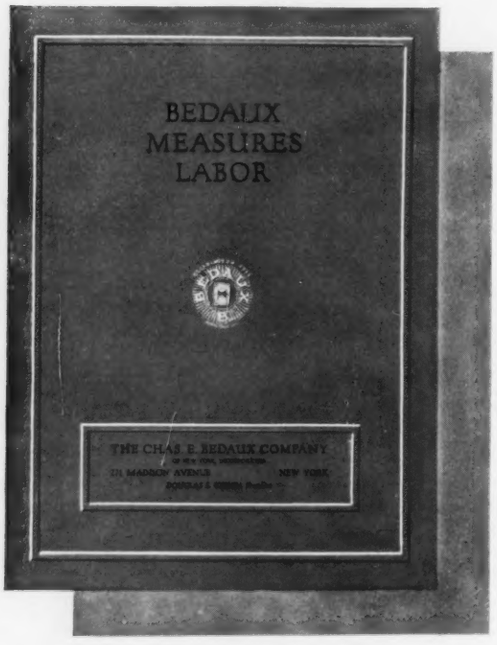
BARBER-COLMAN COMPANY

General Offices and Plant ROCKFORD, ILLINOIS

GREENVILLE, S. C. FRAMINGHAM, MASS.

THE BEDAUX PRINCIPLE DEALS WITH THE HUMAN ELEMENT ALONE

Have you read the story of the "B-Hour"?



Here is a book that tells you how more than 300 mills, involving over 250,000 workers have profited by the Bedaux Principle of Labor Measurement. It reveals how these manufacturers have saved over $80,000,000 in manufacturing costs and increased wages paid employees over $45,000,000—during the past 12 years of its existence.

The book explains the "B-Unit" and shows just how it is applied to reduce all labor to a common denominator. It takes up adequate and protective remuneration, control of costs, improved industrial relations, production control, distribution of burden, advantageous effect on wages, method of procedure, and service to Bedaux clients.

"Bedaux Measures labor", is a book that will give you timely, helpful facts—facts you will appreciate in solving your management and employee problems. If you have not received the copy to which you are entitled as a member of the industry, kindly send in your request at once.

THE CHAS. E. BEDAUX CO.

OF NEW YORK, INC.

DOUGLAS S. KEOGH Pres.
J. J. SKELLY, Gen. Mgr.
22 E. 40th St.
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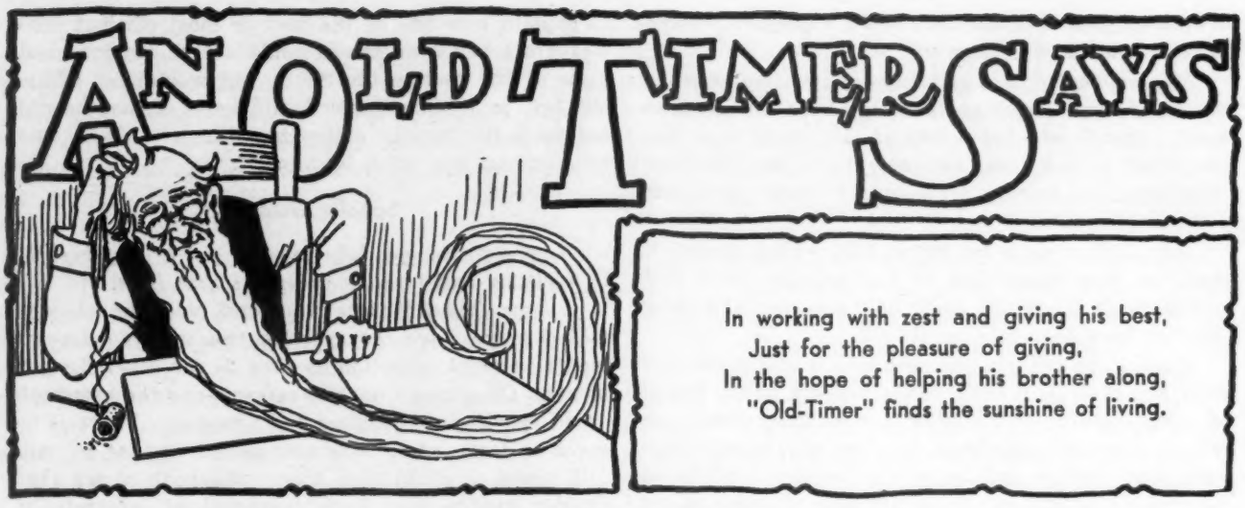
H. B. CRAFT, Vice Pres.
in charge of Sou. Operations
30 Camden Road
Atlanta, Georgia


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

The Story of Old Timer's Methods of Working and Management

Part Nine—Continued from December Issue

THIS, the ninth installment, continues the story of the conversation between Old-Timer and his friend Jim, in which they are discussing Old-Timer's methods of working and management—including a system of checking up and maintenance. Last month we found them in the spinning room, and now they continue their discussion of that department, getting into spooling and warping also. The next installment gets them into the slasher room.

Readers are invited to request reprints of the eight preceding installments, in case they do not have them; and are urged to keep their copies of the issues containing the articles in this series.—The Editor.

(Note: Since this series is written in conversational style, it should be borne in mind that those paragraphs in regular type represent OLD-TIMER's part of the conversation, and those in *italics* are JIM's part.)

(Continued from the December Issue)

Okeh, OLD-TIMER. *Let me see now where I was, and what is next. But really, I can't see any harm in shooting in a little of your old time teachings,* OLD-TIMER, *along with the explanation of my system of keeping up with my work, because you know you were forever telling us such things while you were trying to get us interested in keeping these records.*

What do you mean, "such things"?

Well, for example, you told us 20 years ago that we would all see the time when it would pay better to "lead" our operatives than to "drive" like we were all doing in those days, and the illustrations I have just given about doffers and frame hands bears out that prophecy.

You were one of the hardest drivers I ever saw, but you always seemed to hate it, and one night down at my house you told us for the first time how you felt about it, and then got scared we would go out and tell what you said.

Rave on, JIM, I don't give a darn how much you tell it now since most all successful overseers and superintendents have found out that it is *not* good policy to drive any more.

Don't know as I can tell it exactly like you said it to us, OLD-TIMER, *but as well as I can remember you had three systems to talk about:*

They were "Lead", "Drive" and "Manage", any one of which an overseer or superintendent can adopt as his method.

Drive the operatives and they will have to obey, of course, that is, in the great majority of cases, but turn your back and they will take advantage of your absence.

Lead them, and they will gladly follow, and follow blindly, most of the time; that is, they will follow without looking ahead or making much effort to see what it is all about, but look out, Mr. Overseer or Mr. Superintendent, if you make a bad mistake of some kind in your "leading" they will be just as bitter against *you as they were* for *you.*

Manage them, and that is putting it all into one. Leadership, in the sense of working people, does not mean literally to "lead", neither does "drive" mean you must bawl them out or act like a "bull that broke loose in a china shop."

Management means to develop an interest and pride in the work.

Management means to develop a true spirit of loyalty to the firm and its management.

Management means being frank, and, above all,

honest, in your dealings with and for your operatives. That is what brings Loyalty.

Management means pointing out the advantages of the future and inspiring them to strive for advancement. Instill into the minds of the young men that you want to see them advance; then back up your statements by helping them to get better jobs than you can give them.

Hey! Slow up a bit there, JIM. That all listens well, but how many men do you actually know that are unselfish enough to really help a young man along like you have been talking about?

Sure, I can tell you one man who is still right here with us; that is, I can't really call his name, but if any man reading this doubts that we are actually going over a real experience, let him simply write the publishers and he will be given the names of living men whom he can ask for confirmation. This is not fiction, but actual facts, obtained through years of experience under quite varied conditions, through good times and bad.

All right! All right! JIM! You need not get so worked up about it. Come on now, let's get back on our job in the spinning room.

Spooler Guides.

Hold on, JIM, that is not the spinning room.

Well, it's the next item in the book.

That means you are through with the spinning room then, does it?

No, OLD-TIMER, not necessarily so. But I am going to explain this item while it is here before me. I may find something to go back to the spinning room for that I do not think of right now. I do not see that it makes any particular difference so long as I am explaining the system, does it?

No! No! It's okeh with me. I was just thinking about the fellow who is reading all this junk. He might want you to walk right straight on through the mill, so to speak, and not look back. But I am about ready to agree with you because most books, articles, etc., always follow that set form, and to jump around a little may have the effect of resting the reader.

Really, the only way I have ever found to get a reader to remember something is to hold his attention. Too much of a sameness of anything will tire a reader. I have often caught myself thinking of something entirely different, while reading a book or an article, and right then is the time to either stop reading or get your mind on the subject you are reading about. That's the kind of reading that goes in one ear and out the other and does not improve the mind. This reasoning is based on the fact learned from long experience, that no overseer or superintendent has ever reached his maximum efficiency or production until he has won the *confidence* and *respect* of his operatives.

Just as many OLD-TIMER articles have attemped to show the readers that the most successful overseer or superintendent is not necessarily the man who is most highly educated, nor the man who really *knows* most about manufacturing, but the man who can develop the most in others.

Remember that article where I went into detail to explain how one of the best or most efficient boss weavers I had ever known could not hold a job; had some of the best in the South, but wound up, in his old age, as a time keeper? He knew it, but he did not have the faculty of getting others to do it, and no man can run a job by himself.

Spooler Guides.

Now suppose you take time to get a long breath, OLD-TIMER, and I will take up the next item.

I have found that as a general rule, the average mill does not give the spooling and warping departments as much attention as they do the other departments. Of course I am not referring to the new high speed spooling or winding and warping. There is so much to learn about this new invention that we will talk about it at another time. My book shows that spooler guides have been inspected at intervals of about one month by the overseer of spinning.

He takes a gauge with him and tests a few guides on each frame. Our system requires the overseer (where there is a spooler room large enough to have an overseer in that department), or the section man in a smaller mill to go over one frame each week and set every guide on that frame to the gauge. Later on in this report, when we get to the superintendent's record, you will see that the superintendent also gives his personal attention to an inspection of spooler guides at irregular intervals.

The next item is:

Inspection of Spooler Hands' Work.

Here is a book with the name of each spooler hand in it—one name to a page. The man who takes down spools will be notified to save out all of Sadie Brown's spools until he has enough to creel a warper. When the warper is creeled we have the section man, second hand, or someone start that warper up and inspect each spool where an end breaks and also watch for kinks, long knots, tangles, etc., etc.

This report is entered in the book at Sadie Brown's page. The overseer sends for her and explains the report in detail. If she has a good report he compliments her on having a minimum number of kinks, tangles, etc., and encourages her to keep up her good record. If she has too much bad work, he explains to her how she can avoid the bad work and gives her a chance to improve if she shows an inclination to want to make good work.

Now here is the main idea in this system: All the spooler hands know that we have this system, but no spooler hand knows when her *spools are going to be selected for inspection; therefore, she has to be on her guard to make good work* all *the time. In other words, she has no way of making bad work and knowing it will get by the overseer.*

We only inspect one spooler hand's work per week. But say, Mr. Overseer or Mr. Superintendent, if you don't believe this system will improve your weaving—well, just give it a trial of about six months anyway; then you can quit it if you want to.

I think this would be a good place for you, OLD-TIMER, to explain that little system your overseer tried out on his warpers to catch bad work and show us one

of the reports.

Never mind, JIM. You are doing the talking. You have the floor, so go ahead.

Oh yes! Ashamed to tell about it, are you? Or, did you intend to save that information until you thought we had all forgotten about it, then come out with a great long article and make your readers believe it was your idea?

Now here, JIM, you take that back. You know darn well I have always given you credit for every good idea you brought out. In fact, I have always been proud to tell the big boss about the things you did in your room when he would be going through the mill with me. Honest, now, haven't you seen me make it a special point to steer him around so he would shake hands with you and—

Hold on, OLD-TIMER. *Don't get sore now. You know I was only kidding you. In fact, I know of many specific instances where you have given me credit to the big boss for things when you really gave me the foundation for the idea, and criticized the method or idea until I would get it into shape to where it would show results. I also know that the big boss has told other mill presidents that you seemed to get a lot of pleasure out of telling him, as he went through the mill, about the good ideas your overseers had put into effect; how they had increased production, or did something to help the cost or—*

Sure, JIM. I've just simply got the best set of men—

Never mind, now. For goodness sake, don't you get started bragging on your men. We all know you have a good set of men, so tell us what I asked you.

Well, we thought we were getting pretty good work from our old style spooling. The warping was running good—warper hands running 10 at 60 yards per minute, and keeping them going pretty well; slasher man was not having to show up but very little bad work to the warper hands. As I said, we thought we were getting along pretty smoothly. (Note. A mill of about 50,000 spindles running day and night, which would naturally have more bad work than 100,000 spindles running day time, because, as all overseers and superintendents know, it is harder to hold bad work down to a minimum with two shifts of help, than with one. The reader may compare any size mill with my figures by simply putting his number of spools on a comparative basis. This mill was on 30s yarn made of one-inch American average Middling cotton.) The overseer stopped me as I was going through the spooler room and asked me to have made a report card to use on each one of his warpers. We had printed on a medium thickness cardboard wording as follows:

Tangle Spools _____
_____
_____
Weak Yarn _____
_____
_____
Spools Run Out _____
_____
Slip Knots _____
_____
_____

This, the overseer said, would represent the items which would cause the majority of his warper stops. He placed one of these cards on each warper and instructed the warper hand to make a record of each stop.

Great Scott! You should have seen that first report that he made out by adding all the cards together. That is, adding all tangle spools together and then all the other items from all the cards.

Well, we understand you, OLD-TIMER. *Come on, give us the figures.*

Give me time, JIM. Give me time. And if you don't shut up I will make you tell yours. Here are mine:

	Day Run	Night Run
Tangle spools	425	536
Weak yarn	740	1,001
Spools run out	51	40
Slip knots	66	59
Number spools run	17,204	17,670
Stops	1,282	1,636
Hours run	10	11
Noon	1 Lunch hr.	½
	11 hours	11.5 hours.

Yes, I know what you think, Mr. Reader. You have a right to think just what I know you do, after looking at that report. But we are trying to give you information that is based on an honest report—told to you just exactly like it came to me. Sure, we went to work on it. In fact, we were all so confounded ashamed of the report—but there is no need to explain all that. Anyway, suppose *you* try the same little system on your warpers before you say too many bad things about us.

HERE we must leave Old-Timer and Jim for the present. The next installment of this series, to appear in an early issue, finds them getting into the slasher room, where they will spend some time, later getting into the weave room.—The Editor.

When the constitution was being drawn, one man jumped up on the floor and objected, because "many citizens will be more than 300 miles from the seat of this government."

Foolish, wasn't he?

Well, how about the overseer of today who objects to every progressive idea the superintendent tries to put across?

It seems a strange fact that all young men wish they had inherited riches, while all history, all statistics and sound reasons tell us that there never was a greater curse on a boy than to be born rich.

Just run through your memory now, before you say OLD TIMER *is a fool, and see how many really great men you have ever read or heard of who were born rich.*

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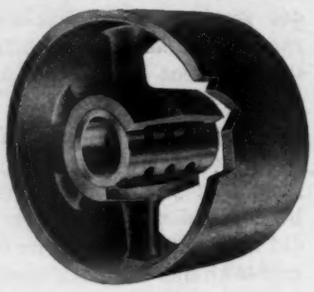

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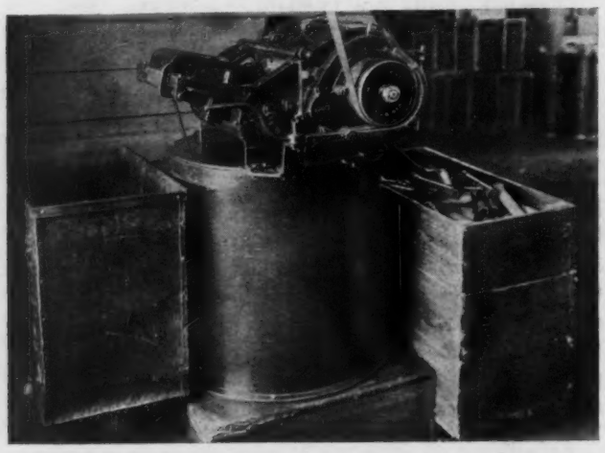

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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

Wants Methods of Slashing Crepe Yarns

Readers are invited to answer this question by giving their methods of preventing this high-twist yarn from rolling and taping . . . . . .

EDITOR COTTON:

I have a problem with regard to sizing crepe yarn at the slasher which I should like to submit to your readers. Our construction is: 1,534 ends reverse, 80s/2; 1,534 ends regular, 80s/2. This yarn is twist-on-twist with 60 turns of twist to the inch.

We do not seem to be able to run this on the slasher, as when the yarn leaves the size box it rolls together or tapes to such an extent that it breaks and snarls at the lease rods.

Any method which your readers may give that will assist in handling this yarn successfully at the slasher will be very much appreciated.

CONTRIBUTOR No. 6167.

Wants Criticisms of Card Settings

EDITOR COTTON:

I am giving below the speeds and settings which we use on our cards. I would like very much to see these discussed in the "HOW OTHER MEN MANAGE" department, especially the flat settings.

We are running 1 1/16-inch Low Middling cotton, making a 55-grain sliver, with the following speeds: Licker-in, 428 r.p.m.; cylinder, 165 r.p.m.; and doffer, 11.5 r.p.m.

Our settings are as follows:

Feed plate to licker-in, 7;
Licker-in to cylinder, 10;
Back plate to cylinder, 29;
Mote knives to licker-in, top 12;
Mote knives to licker-in, bottom 10;
Back screen to cylinder, 22;
Middle screen to cylinder, 34;
Front screen to cylinder, $\frac{7}{8}$-inch;
Doffer to cylinder, 7;
Flats to cylinder, 10, except the front stand, which we set to a 17.

We set the front stand to a 17-gauge because they gradually load from the back and by the time they reach the front stand they are heavily loaded and a close setting will not give additional carding but will cause the stock to roll and pass on into the web in that condition. We find that the settings given on flats give us better work, and we know that these are being run on fine work with good results.

I should appreciate having some of your readers discuss the above, giving their ideas and practices in detail. I am sure that all of us will learn a great deal by such an exchange of opinion. I would particularly like to have the opinions of those who disagree with us, with full reasons why.

CONTRIBUTOR No. 6172.

◆ ◆

WE invite our readers to make us of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Joins the Combing Discussion

EDITOR COTTON:

I have been reading with a great deal of interest, the articles which have been appearing in COTTON concerning combers, and feel that I should like to make a few remarks about the system and settings, found to be okeh at our plant.

However, in regard to half laps or top combs, I should not like to side with either "M. W. H. (Mass.)" or "R. G. (R. I.)", for they have both put up good arguments, but as in the case of spindle versus traveler, I think that one without the other is useless, and until someone comes forward with more convincing proof than has yet been given on the subject, I'll stay neutral, although, in the long run, I am inclined to favor the half-lap boys, but will take this up later.

Just now, I am going to tell you about a plant where there are 60 Whitin D-2 combers, and where it is found better to use two third hands, 30 combers each, than to employ a boss comber man, which is done at most mills with this amount of combing. The comber tenders run 10 combers each, and on Saturday morning, or the stopping day of each week, they are required to polish the sliver tables, puff pans and coiler heads of each comber. The third hands are required to varnish all leather detaching rolls and inspect all draw box rolls weekly, take waste percentages on 30 combers weekly and each third hand has to take down two combers each week for complete overhauling. Each third hand has an oiler who assists with the overhauling.

At this time all gears, bearings, etc., are inspected and replaced if need be, and at this rate each comber gets a complete overhauling and reset every four months. All top combs are inspected and repaired or replaced weekly, likewise half laps.

The following settings are used for peeler 1 5/16-inch cotton 18 to 20 per cent waste:

Segment from detaching roll 1⅛-inch, index 5; angle of nipper frames 36 degrees; feed roll from

detaching roll 1⅝-inch, feed 6¼; cushion plate from detaching roll 1½-inch; nipper knife to half laps, 21; top combs to segment, 21; angle top comb 24 degrees; nippers down at 10¾; detaching roll forward at 6. The roll varnish recipe is as follows:

1 pint acetic acid; 4 ounces of pulverized glue; 1 ounce of gum arabic; 4 British vermilion; 1 teaspoonful of glycerine and 1 teaspoonful of oil origunum. CONTRIBUTOR No. 6178.

M. W. H. Closes His Case

Offers series of sketches ot prove his point about the half lap doing more of the combing than the top comb. Where, oh where, is "Contributor No. 5070"? . . . . . .

EDITOR COTTON:

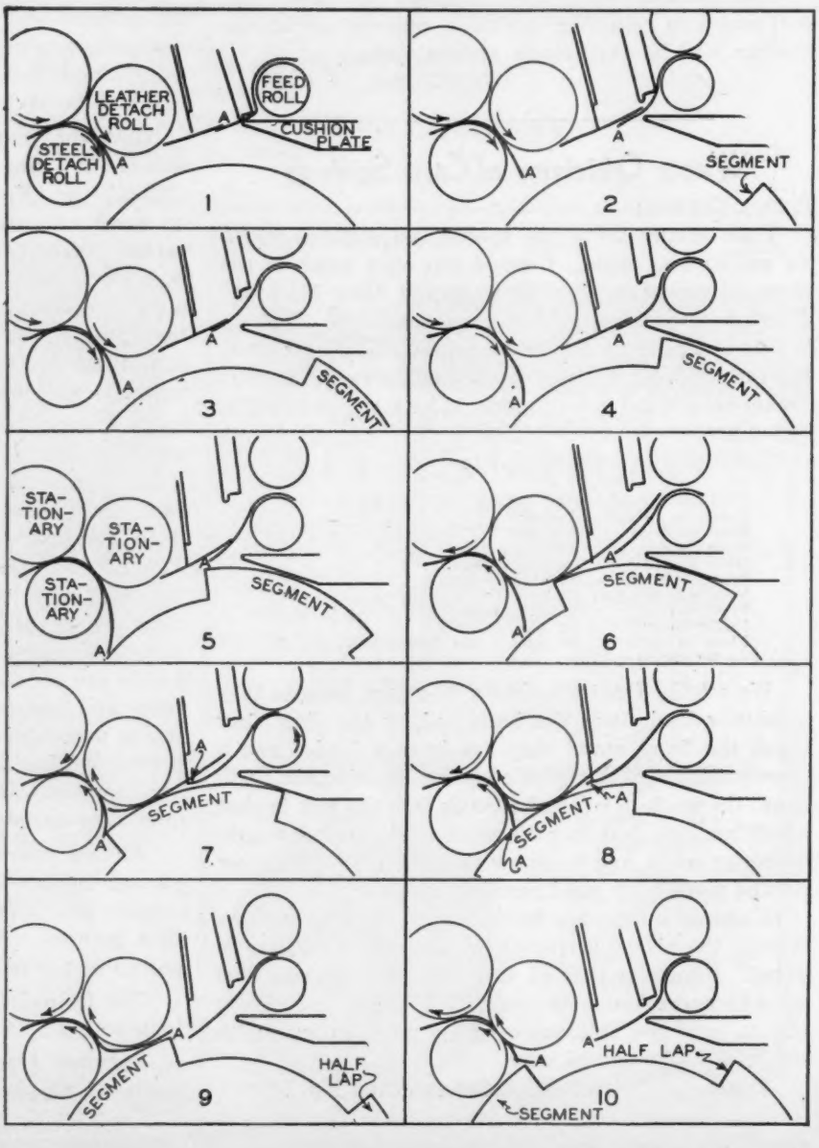
The discussion on combers, between "R. G." and myself, has narrowed down rather fine, and I am afraid that he and I will soon be deadlocked unless we can get some more comber men aboard with us on either side. Really, "R. G." and I both know the primary advantage of our discussion is represented in the little points that both he and I have picked up about combing, and which are being brought out, rather than the relative importance of half lap to top comb.

That is why I am in this discussion. If I cannot pick up some new point or line of thought in exchange for one that I have given, I will stop writing. I am in cotton manufacturing to make a living, and I like the business better than any other in which I could make a living, otherwise I would be in some other business. My desire is to produce the best quality and largest quantity possible with the machinery and stock that the directors of this company put at my disposal, and I have found that exchanging ideas through the columns of COTTON has helped to produce results. I think this will answer the charge that I am in this discussion merely for the sake of argument.

Now, in order to clearly illustrate just what happens to the fibers when combing, I submit the accompanying set of diagrams, drawn as close to actual size and setting as is possible with pen, and showing the relative position of the parts at each time on the timing wheel. ("M. W. H." submitted these sketches actual size, but for reasons of make-up, it is necessary to reduce them exactly one-half, in which scale they appear herewith. —The Editor.) The angle of top comb and nipper knife is not perfect, but is approximate. The figures are numbered from 1 to 20 and correspond to the timing wheel. Of course 80 figures could be used and show the accurate timing, but this should not be necessary. The timings I have illustrated are the ones that "R. G." advised in his letter on page 59 of the September issue of COTTON, and are very close to the ones I have used on Model D-2 combers. Of course quarter-numbers are not shown but the next full number is shown and suitable allowance made for the difference.

In Fig. 1, the broken ends of cotton are shown at *A* and the detaching motion is just starting to back up. The feed roll is of course stationary, and the nippers are starting to open. Just what happens can be followed to 5¾, when the detaching roll starts forward. Fig. 6 shows just how the segment raises the combed fibers and meets the bite of the leather detaching roll, which is just beginning to bear on the segment. This bite pulls the long fibers out of the mass and drags their ends through the top comb, as shown.

Now, at 7, the feed roll turns and "R. G.'s" figures show this delivers .1339-inch of cotton, plus any discrepancy in figuring by not allowing for the



flutes of the feed roll.

The reader will have to make a test on his own combers or else take my figures. From 1 to 4¾, while the detaching roll is backing up, the large internal gear that drives the steel detaching roll turns back 8 teeth, and from 5¾ to 11¼ it moves forward 16 teeth—being moved by the motion of the cams. The steel detaching roll is 9 inches in diameter and carries an 18-tooth gear, which we have just seen is driven by the equivalent of a 16-tooth gear. Therefore,

$$\frac{16 \times .9 \times 22}{18 \quad 7} = 2.51$$ inches pulled forward, while the feed roll has delivered .1339-inch. This draft is the thing that I believe has misled the top comb boys.

Referring again to Fig. 6, this shows that the tip ends of the longest fibers are the only ones pulled forward, and as some writers have advocated the loose ones that are dragged along with them. Bear in mind that the top comb is in there all the time, and I believe the fibers that go along, which are not in the bite of the leather roll, are negligible and certainly the fact that the feed roll turns, while piecing-up is going on, cannot push fibers along.

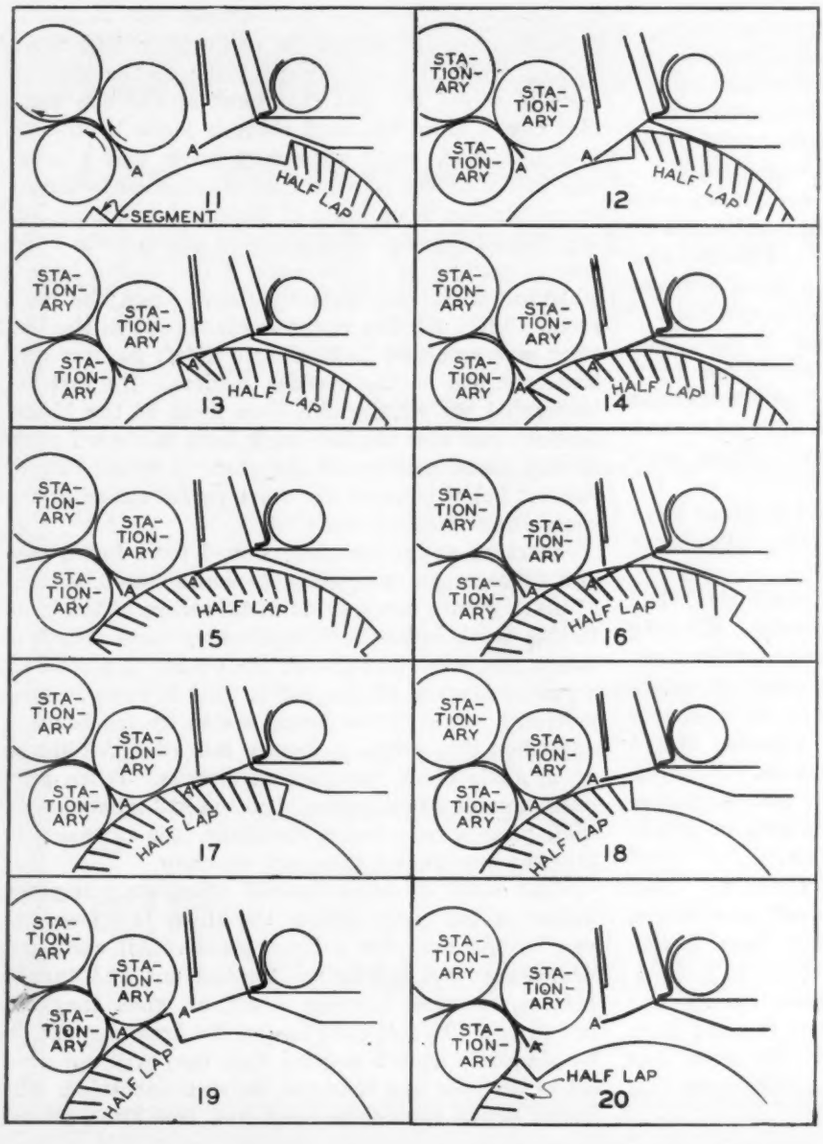
Now, if the reader will measure his own comber, or measure my drawing (bearing in mind that they are reduced to half actual size) he will find the distance from the bite of the leather detaching roll to the cushion plate is at least one-inch. Therefore, before the fibers can be pulled out of the mass they must be advanced by 7.4 nips as the feed roll delivers .1339-inch per nip. On every one of those 7.4 nips, 17 rows of needles of the half lap comb these fibers, and then when they finally go forward their tail ends are combed by the single row of needles of the top comb.

These figures no doubt are not perfect, as I agree that some fibers drag along the same as when we are stapling cotton, but the top comb acts as a detriment to their passage—but bear in mind, in order for the top comb to comb, the fibers must be dragged through it by a positive grip, and not just float through.

The remainder of the drawings show the nippers closing at 10½ and the half-lap combing from 18 to about 18½.

I have tried to show, by illustration herewith, the fact that the half-lap does more combing than the top comb, and, at the same time, show the whole action of a comber through one nip.

M. W. H. (MASS.)



Safety.

EDITOR COTTON:

What is safety? Why do manufacturers take great precautions to safeguard the health and lives of their employees?

From the beginning of time, there has always been more or less regard for the protection of the body. The law of self-preservation which prompts all God's creatures to guard themselves from harm, is the basis of safety.

The civilized world has made rapid advances in the sciences, mechanical and otherwise, in the last twenty fears. It is often said that men, in their zeal for accomplishment, have gotten away from the finer things of life. This seems to be a rather erroneous statement to make.

We all realize that the longest span of human life is very minute when compared with eternity. Deep down in the mind of the worst of us may be found the spark of human sympathy which is nothing more or less than the seed of brotherly love, which is our most precious heritage and should be

guarded well in order to secure that happy state of peace and contentment for which we all strive incessantly.

In the dark ages when every man was his own producer, before the era of social civilization, the primitive man was actuated entirely by the law of self-preservation. Even then, when man was little removed from beasts, history cites incidents when the strong guarded the weak. It is true that they fought the beasts of the forests, that they cared for the wounds which they received defending themselves from their enemies. The law of self-preservation actuated them to do this.

As time went on, each generation left their store of knowledge to the following generation. The natural sequence was that progress was instituted and the species of creation called man, possessor of a retentive memory, increased in wisdom and knowledge.

Later they split up into tribes and had duly appointed leaders who cared for the safety and advancement of his followers. And so on down through the ages we find leaders, men whose wisdom and knowledge was deemed superior to the average. And even through the ages when man seemed doomed to a return to the primitive, when the fabric of civilization was being torn to shreds, we find leaders who guarded the welfare of their followers with a zeal that is undoubtedly the basis of civilization.

In this enlightened age of ours, every man, outside of the imbecile, has developed in intelligence in accordance with progress; therefore every man can think for himself in these new conditions, even as our remote ancestors did in their primeval state.

However there was a trait in some of those gallant warriors of prehistoric days which has been handed down to our generation and which perhaps has gained impetuous due to our arrogant pride, and self-satisfaction in our attainments. That trait is carelessness!

As they were wounded and killed in those days through carelessness, so are we in our enlightened period suffering from the same cause.

Carelessness can be classed as a deadly sin! It is the fruit of our insurmountable conceit. We take the same precautions today as our ancestors took. We have leaders, men who make a study of safety devices. Employers install these devices wherever possible. No chances are taken. Expense is not spared in the war against carelessness. Notwithstanding all these efforts, however, manufacturers find it necessary to include hospitals with an efficient staff as part of their organization.

Carelessness causes this added expense. Men will clean machinery in motion, take off gear covers, and belt guards, use knives and other sharp instruments without caution.

While we cannot watch over them twenty-four hours of the day, we do endeavor to protect them during their hours of employment. We know that our efforts are being rewarded. Statistics prove that we are saving life and limb.

A glance at the newspapers will tell us that the mortality rate is higher where people are left to their own resources than when employed in a plant with revolving machinery and seemingly greater chances for accidents.

But it is just like ringing a bell; when you quit pulling the rope the bell gradually stops ringing and finally stops altogether. If we discontinue our efforts to combat carelessness, accidents will pile up again. Therefore let us all pull for safety.

Any ideas which might tend to strengthen our defense against carelessness should be submitted for the good of the cause, because as our ancestor's law was the survival of the fittest and even at that, they protected the weak, so in our age of "mind over matter" should we seek to safeguard those whose mental state makes them a prey to carelessness.

CONTRIBUTOR No. 4800.

Controlling Bad Work from the Card Room.

EDITOR COTTON:

I have been especially interested in reading the articles appearing in the "HOW OTHER MEN MANAGE" department with regard to controlling bad work coming from the card room. Some of the articles seem to stress the fact that most of the bad work that comes from the card room is made by the fly frame tenders, but I personally know that a great deal of the defective work that is returned to the fly frame tenders is no fault of theirs. I recall the experience of a young man who was promoted to overseer of carding at a time when it just looked impossible to control the defective work from the card room. What did this young carder do when the bad work was returned to him? He didn't go over and bawl out one of the speeder tenders. He just investigated the matter and bore most of the blame himself, and now the bad work from that card room is just about a thing of the past. I would like to suggest below some of the more useful remedies for controlling this bad work.

Starting at the opening room, I have found several times, when examining the white cotton, a lump of black grease down about middle ways of the bale. If this black grease, which probably came from the cotton gin, was run through the opener and pickers, it would blacken all the cotton that it came in contact with while it was being beaten by the beaters, and when this cotton is formed into roving it shows up as little black intermittent streaks. When anyone is running two grades of cotton and must change their pickers from one to the other, it is advisable to give the machines a thorough cleaning.

Bad work is often caused when stripping the doffer of the cards, unless the sliver is allowed to run on the floor for a brief period. All card and drawings cans should be brushed out and turned bottom up when blowing down, or when they are not in use. The full cans behind the drawings should be placed in such a manner that they will not drag off of the floor and then run through unnoticed. The coiler heads should be clean and free from oil ex-

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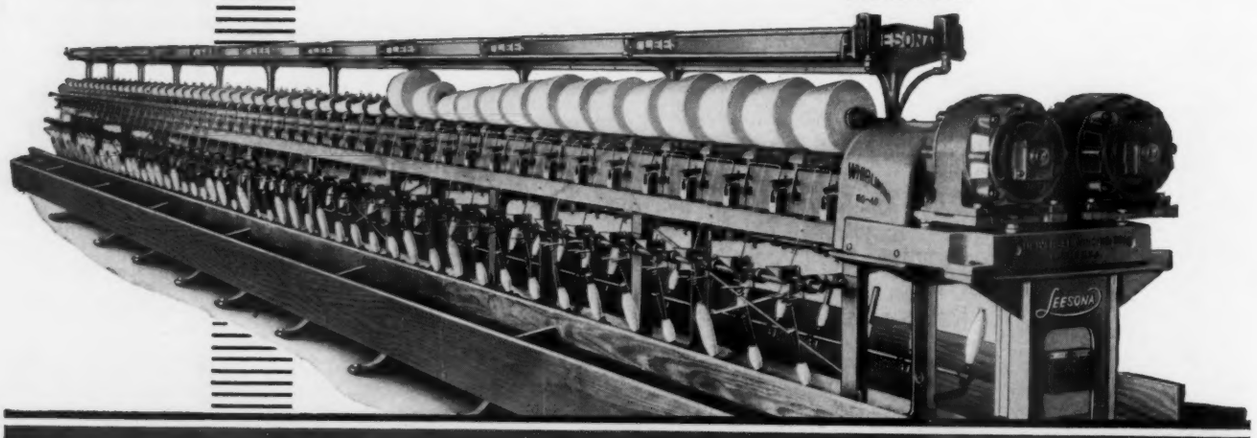

UNIVERSAL WINDERS

cept where it is needed. The top clearers should be cleaned, top and bottom, and turned or replaced when necessary, as dirt and lint will accumulate on top of the clearers next to the boards, and this will fall out at times when the clearer board is raised, into the sliver or roving, which will cause slubs.

Other very familiar points which have been covered in several recent issues of the magazine are cleaning the flyers, spindles, boxes, and tops; careless oiling, stacking the roving in boxes; and blowing out the bobbins with compressed air. Last, but not least, we come to the oiling of the spindles. Spindles should be oiled once a day with hard waste saturated with heavy oil, changing the waste each day. If the spindles and bolsters are new, they should be oiled twice a day for the first two months. I want the readers to try this for ten months before condemning me, because anyone who will try this may find that it will make matters worse for the first month and they will be obliged to blow out the bobbins once a week with compressed air.

T. R. (N. C.)

Setting Cards Flats.

This contributor advises a setting of 9/1000. What is your opinion? . . . . . .

EDITOR COTTON:

The questions that were asked by "CONTRIBUTOR No. 4838" in a recent issue pertaining to carding are questions of a very practical nature. I was taught card grinding, but the answers to these questions were not included in the course.

I would like to say in the beginning that nothing happens on a card that does not have a definite cause and effect, as will be found if one has the patience and facilities to properly investigate.

The surface of a card cylinder or doffer before the wire clothing is put on is far from being perfect. I have seen instances of where 250 cards would be tested for the setting of the flats to the cylinder, and not 20 out of the 250 would test to within 2/1000 to 3/1000 of what they were supposed to test. Some might feel that this is a small allowance. If they do, however, they should realize that this is setting a rigid surface to gauge. It must be remembered that many mills set non-rigid surfaces to a 7/1000 gauge. Variation in card cylinders may be overcome by grinding the wire until every point on the cylinder is down to the lowest point, but we grind the cylinder to gauge.

Unevenness may always be caused by the arches not being true. I have found cases where the arches would have hammer prints on them, and I believe that in some of the cases where I have experienced irregularity of card flats the trouble was due to hammer prints. We found this trouble by first being sure that the surface of the cylinder wire was even. Now if anyone wants to know what I mean by even, I mean that every place on the cylinder is set perfectly to an even surface. After making sure that the cylinder surface is even, we next set each setting point to the same flat and try that flat anywhere and everywhere on the arch. By this, I mean half-way and quarter-way between points of setting. With a good arch, a perfect cylinder, and a flat set to all points the same, this flat should be the required gauge distance, no more no less, from the cylinder at every point from the time it reaches the arch until it leaves again.

In most cases when flats rub the trouble is due to the flats. The only reason flats are not even is because they have not been ground correctly, unless they were sprung through rough handling. The surface of the flat that rides on the arch may be badly worn, but I hope no one has any so badly worn that they are thrown out.

In grinding flats, I think it wise to take a stop watch and time the grinding period of each flat, and also find out how many of the set are grinding. I have had a grinder to offer to stake his job that every flat in a set was grinding and during the time he was making the statement a flat would miss. He was telling the truth, too, about the time he watched them go around. Some flats will often grind one time and miss the next. Anyone failing to see that all flats grind each and every time they pass the grinding roll cannot hope to have even flats. Care should be taken to see that they grind the required length of time, and that they do not drop down about ⅛-inch before the end is reached.

If after grinding the flats are not suitable, then in order to get results it is either necessary to buy a new grinding mechanism or make improvements on the one used at the time. The grinding dog that holds the flat up to the roll can wear and be badly out of shape, which will prevent efficient results being obtained. This dog may be re-shaped and hardened by means of a welding outfit. The grinding dog must allow a flat to stay on the roll until thoroughly ground and must drop the last one ground before taking up the next one.

When the grinding dog is working properly the flats will grind correctly, but we have found it impossible to have this dog working as it should at all times. If it does not allow the flat to work up to the catch on the slipper each time it grinds it will, due to the fact the slipper is tapered, grind too hard and make a low flat. Another reason difficulty is experienced is because the back of the flat riding on the dog is not a milled surface, but just a rough cast. This makes regular and fine adjustments impossible.

We were able to make everything work except the slipper. It was just impossible for us to get a flat to get all the way up on the slipper each and every time.

We set our flats to a 9/1000 gauge. Many men say they set theirs to a 7/1000 gauge, but I'm not so sure about such a setting. I have never had a card set on a cement floor, and I find that we are always getting some vibration. When we set a card to a 9/1000 gauge, it is set to just that. We listen for noise just as anyone else does, but if we hear any we do not take a spindle and pull the setting off a little and then say it is set to a 9/1000 gauge. If any rubbing takes place after the card is set and started up, the card is stopped and if a flat is found to be high it is ground to what it should be.

Cards should be ground often enough to keep them

sharp, and the frequency of grinding in order to do this depends to a large extent under what conditions the cards are running. I would start by grinding lightly for eight hours every 225 to 250 hours of running time. I would have flats set every three months and the complete card set every six months. I would change the emery on the traverse rolls every two weeks and that on the dead rolls every six weeks.

"CONTRIBUTOR NO. 4838" said that he only had a breaker, intermediate and finisher picker, and that the cotton is not in ideal shape when it reaches the cards. If he is using a rigid beater in these processes, I can readily understand why his cotton is not in good shape. I would rather have a hopper on the back of the cards and feed them from the bale. I would like to suggest that our friend try giving his cotton about 30 blows, this being divided between two of his pickers. I would also advise the use of a Buckley type non-rigid beater. The licker-in should be in good shape and well set up. If our friend is using 1⅛-inch cotton, I would not advise him to run it through a vertical opener.

"CONTRIBUTOR NO. 4838" also wanted to know why 1⅛-inch cotton is harder to card than ⅞-inch cotton. I will answer this by asking him if he ever noticed the difference in pull when stapling 1⅛-inch cotton and ⅞-inch cotton? This explains why 1⅛-inch cotton is harder to card.

CONTRIBUTOR NO. 5054.

Cotton Mixing

EDITOR COTTON:

Cotton mixing is a very vital part of cotton manufacturing, especially if the objective is to obtain a round, smooth, even yarn of high tensile strength. In making up a mix of cotton, the number to be spun should be taken into consideration, as well as the use for which the yarn is intended. The mixing should be done by a man who knows both staple and yarns.

Even after obtaining a satisfactory mix, the good qualities obtained by such a mix can be very easily offset by some of the subsequent processes through which the cotton has to pass. Right here is where we need an efficient overseer of carding, a man who is able to choose men who will carry out his instructions in the setting of the various machines in the picker room.

The opener should not have too high a draft or air current, as this will not allow the cotton to clean and open properly. After cotton has passed through the opener and cleaning trunk, we next have it on the breakers where it may be very easily spoiled. Too much care cannot be exercised here. The laps from this machine should be weighed and the weights held just as closely as possible. Every mixing of cotton will not make the same weight of lap per yard, therefore the picker-fixer and help should be trained particularly to let nothing pass the breaker that would cause trouble, or tend to cause trouble on the intermediate.

Assuming that the breaker laps are 100 per cent perfect, they can be very easily ruined on the intermediate by wrong settings, slack belts, evener out of working condition, fan speed too high, feed rolls too close to beater, laps too puffy, flutes worn off of bed rolls, fiddle backs not in good shape, laps not properly distributed on apron, apron too slack, cross shafts stuck, grid bars not set properly, and about ten thousand other things that could cause a lot of trouble on this machine, and spoil the work if they were not properly taken care of.

The weights should be held on the intermediates just as closely as on the finisher, then when the laps are placed on the apron of the finisher, the evener belt does not have so much traversing to do, which makes it possible to obtain a real satisfactory lap to place on the card.

I allow a variation from standard of one-fourth of a pound either way on my laps, and I group them according to their weights. Say 42 pounds is standard, I mark these laps red and put them on a red truck; I mark those that weigh 41 3-4 pounds yellow and put them on a yellow truck; and those that weigh 42 1-4 pounds, I mark green and put them on a green truck. I have made the lap proposition foolproof. I have a line of cards that I run the laps from the red trucks on, another line that I run the laps from the yellow trucks on, etc. Then when the cards are doffed, the cans are marked with red strings around the cans from the red lap, etc.

I then take two red string cans, two green string cans and two yellow string cans and place them behind the first drawing. This reduces variation to a minimum. I use this same method of combining the different weight cans on the ribbon and sliver lap machines, which further eliminates variation. As still further efforts to get rid of as much variation as possible, I take one drawing from each comber until I have six slivers, and mark my slubbers and take one roving from No. 1 slubber and one roving from No. 2 slubber and run these together on the intermediates. This system is also used by running roving made from two different intermediates on the finisher fly frame. The same practice is adopted in the spinning room.

Another thing that I think it impossible to lay too much stress upon is the correct tension to have on the stock at the different processes. Beginning at the card, the web from the doffer to the calender rolls should never be allowed to sag too much, and in no case should it be allowed to run too tight. The ends on the drawing should never be allowed to run the least bit tight, but should be kept sagging slightly at all times. The drawing is a very important point to watch, and the very best help available should be used. The tensions on drawing should be soft and easy at all times. The same kind of tension, soft and easy, should be had on the slubbers, intermediates and speeders.

In the spinning department the matter of roll setting to staple being worked, travelers best suited to numbers being spun and rings being used should be given careful consideration.

CONTRIBUTOR NO. 4991.

What a Survey Did for Us.

This man reports concrete results from a "home-made" survey of his carding and spinning . . .

EDITOR COTTON:

Recently the officials of our mill held a meeting to decide what could be done in order to permit us to compete more nearly with other mills on the same lines as ours. The wages at our mill were on a par with those of other mills, so it seems that other ways and means had to be discovered and adopted for reducing our cost. About every week we would have inquiries concerning large orders, and after our cost man had figured right down to a fraction of a cent, we would find that some other mill could make the same goods cheaper than we were able to do.

It was decided that a survey of the mill be made and a report given later as to just what was found, together with any suggestions as to what could be done to better conditions. I will try to tell a few of the things we found.

We, had, like a lot of other mills, always enjoyed a good reputation and had had enough business to keep our spindles and looms running full time, but for the past year or so things had dropped off so that we were running only about 20 per cent of our plant.

Now, I don't want to give the impression that we made a survey, and in a couple of weeks had the mills going at full blast. Far be it from such, but I think we found a few things that have helped our costs and through the co-operation of our overseers and the help we are making a few changes, and at the present time things look better. I know of two orders on which we are now running that a few weeks ago would have put us on the minus side, had we accepted them then, whereas today we are on the plus side.

I will give a few of the things we found and what we have done in the way of helping them. No doubt some men will say, "We don't have to make a survey of our mill to find those things out", but it would surprise a good many if they would take a little time off and check up on the little things; and if you could find only one item and that one item meant only a fraction of a cent a pound, it might mean the difference between making a profit and at least breaking even. As everyone knows, with conditions and prices as they are today, it is the litle fraction of a cent that a few years back was overlooked, which counts today.

To begin with, the first thing we checked was the amount of waste being made. Waste is an expensive item and can be reduced at any mill. On our cards we found that some of the card men, when creeling laps, would break off from one to four yards and throw this into the waste cans. With a card draft of 120 quite a few yards were being lost. After explaining the conditions to our card men and showing them how to arrange their laps so as to have a five or ten minute interval between each five cards, and not all run out together, we have reduced our waste at this particular place by 50 per cent.

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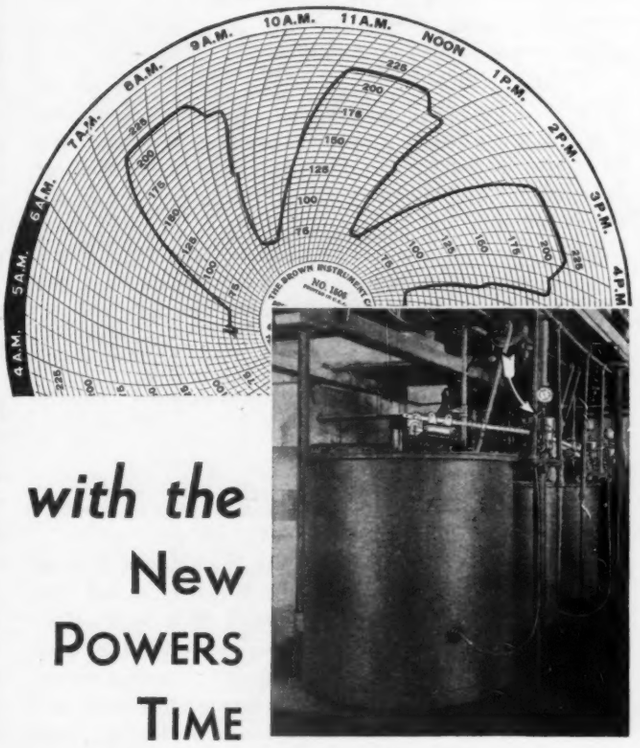

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On our drawing and speeders we also found that there was quite a bit of waste being made that could be eliminated. We had some special painted cans placed at the drawings and speeders, and each day the second hand weighs the waste made by each operative and posts a notice of the amount made. In this way we can tell who is making the most and this record gives us a guide.

At our slubbers, we found that quite a bit of drawing sliver was left in the cans when creeling, this being caused by uneven yardage in the cans. We have eliminated this to a certain extent by creeling half of the slubber at a time instead of the whole machine, thereby giving the slubber tender more time to run the cans down lower. We also checked the measuring motions on drawing and tried to get them all as near alike as possible.

The amount of bad work being made was checked, and whereas we could not call it excessive, we explained the conditions to all of the speeder tenders and through their co-operation have reduced the amount quite a bit.

The bad work is handled the same as the waste; that is, a notice is posted each day of the amount made by each hand.

The next item we checked was the amount of supplies being used, and this, like the waste and bad work, if not watched closely, will in a short time amount to quite a few dollars. Whereas the help were not throwing good brooms and brushes away, we have drilled it into them to be more careful and make these supplies last a week or two longer—and they are doing this. Instead of using brooms around the room, we now use floor scrapers made with the old fillet from card stripping boxes, and this has cut our broom cost in half.

The things I have mentioned are all small items, and as I have said, a lot of men may say, "I know all about the amount of waste, etc., that is being made or my overseers are watching this", but all I can say is, check up on these things yourself and see if you are not surprised.

In our spinning room we were running 28s warp yarn from 5.00-hank roving and getting a break of 68 pounds. We decided that if we could make this from 4.00-hank roving it would mean quite a saving. We made a sample, and whereas our break dropped a few pounds, we find that it runs fairly as well as before in the weaving. We are now running all of our 28s warp from 4.00-hank roving, using a wooden middle roll, and find that we save ¼ to ½ a cent per pound, which shows that it was costing us in this extra amount for the four or five pounds of additional breaking strength that we can get along without. Of course if this were sale yarn, tire yarn or some yarn that required an extra break, we would not attempt to do it, but for our own weaving it is entirely satisfactory.

After visiting a few mills using the same staple of cotton as ours and finding that they were putting in quite some less twist, we decided to check on our twist, and today we are using eight teeth of twist less in our carding and four less in our spinning.

The twist at our speeders was not just a matter of putting on a larger gear, but we started back at our pickers and reduced the blows per inch and followed this right through, checking speeds, including card settings which were changed somewhat as follows: The feed plate was 7/1000, and now it is 12/1000; the knives were 17/1000 top, 12/1000 bottom. Now they are 12/1000 top and 10/1000 bottom. We changed the stripping plate setting from 34/1000 to 22/1000, and the flats from 10/1000 to 7/1000.

At the drawings, the roll settings and tensions were checked, and also the top rolls. At the slubbers and speeders, after getting the proper lays per inch and tension we found we were able to run with four teeth less twist at the slubbers, two less at the intermediates, and two less at the fine frames.

We have also changed some of our weights and hank rovings so as to eliminate a few and use little longer drafts.

It may be of interest to the readers for me to give the figures on some of these changes.

The cotton we are using is Government 1 1/16-inch staple, Middling grade. The following were some of the weights, twists, etc., in use at our mill before the survey:

On the picker, 150 blows per inch. The card settings have already been mentioned. The hank rovings that were made were: Slubbers .52-hank, .60-hank, and .70-hank, using 1.21 as a twist multiplier on all hanks. On the intermediates, we made 1.30-hank, with 1.18 multiplier; 1.60-hank, with 1.19 multiplier; 1.80-hank, with 1.21 multiplier; 2.20-hank with 1.21 multiplier. On the speeders, 4.00-hank, 1.22 multiplier; 5.00-hank, 1.25 multiplier; 6.00-hank, 1.40 multiplier; 7.50-hank, 1.40 multiplier.

In the spinning, we were making 20s filling, with 3.90 multiplier; 26s filling with 3.90 multiplier; 36s filling with 3.90 multiplier; 40s filling with 4.06 multiplier; 28s warp with 4.78 multiplier; and 34s warp with 4.84 multiplier.

After going over these weights, speeds, etc., we decided to reduce the blows per inch on the pickers from 150 to 95. On Government 1 1/16-inch staple cotton, with the excessive beatings that the stock was receiving, there was no question but that the fibers were being injured, and now after reducing the blows per inch and having our cards set so as to offset the cleaning which we are losing at our pickers, we found when the stock arrives at the slubbers, that there is some body left to the cotton and we were thereby enabled to remove a few teeth of twist.

It will also be noticed that we were making three different hank rovings at our slubbers, four at the intermediates and four at the speeders. After making a few tests, we adopted the following at the slubber, one-hank roving, that is .60, with 1.10 for a twist multiplier. At the intermediates we are now making two-hank rovings, 1.50-hank with 1.10 multiplier and 1.80-hank with 1.19 multiplier. At the speeders we make two-hank rovings, 4.00-hank with 1.10 multiplier and 6.00-hank with 1.20 multiplier.

At the spinning, we are still making the same numbers with less twist per inch in all of them, using: one 20s filling, 3.60 multiplier; on 26s filling,

3.75 multiplier; on 36s filling, 3.75 multiplier; on 40s filling, 3.80 mutiplier; on 28s warp, 4.60; and on 35s warp, 4.68 multiplier.

As stated before, we are using a light wooden middle roll on all of our spinning, and although we have not as yet changed all of our frames over, those that are running with the new roving and longer drafts are entirely satisfactory. Following are the drafts we are now using as compared with the previous drafts:

Yarn	Previous Draft	Present Draft
20s	10.6	10.0
26s	10.0	13.0
28s	10.7	14.0
34s	10.9	11.3
36s	11.6	12.0
40s	10.6	13.3

Even now, one could not call these excessive drafts. All of the work at our mill is carded.

The Weave Room.

I will now discuss the results of our investigations in the weave room. Most of the styles in our weaving are plain weaves, with the exception of a few fancies which are kept separate and woven on our dobby looms.

After going over the loom lay-out, we found that the different styles were scattered about the rooms and the weaving jobs ran from 16 to 24 looms per weaver. We have adopted a system which is working out very well and saving the company a few dollars.

The first move was to block our looms, that is, put all of the same styles together and have the weavers run only on one style wherever it was possible. Then we took time tests and loom stoppage tests to see just how much time the weavers were having to spare, and after careful study decided to extend some of the jobs. We took one section where the weaver was running 24 looms and made the job 48 looms and put in a battery hand to take care of 80 looms. On this particular style, the filling, 27s, lasts 9 minutes, on 72 pick goods. These are 27-inch looms, on pillow tubing, and run 150 picks per minute. All of our other looms are 40-inch Draper, and run 150 picks per minute.

We watched this section run for a few weeks and found that our production, quality, etc., were just as good as on the previous layout, so we decided to continue to extend the other jobs. On our styles which are 92 pick goods, using 30s filling, the filling lasting 6 minutes, our weavers are now running 40 looms and the battery hands take care of 60 looms. This used to be a 16-loom weaver's job.

Our weavers remove their own cloth.

The pay was all figured so as to give the weaver about the same money as previously, and the battery hands about equal to one-half the weaver's pay.

We have also started on a piece work plan which, although not given long enough treatment to tell just how it will turn out is to date working okeh and our production has increased quite a bit.

The system works as follows: All wages are based on the amount of cloth taken off of the looms. With this idea in mind we find that when a loom fixer starts

ABOUT the time old Andrew Jackson was turning over the reins of government to Martin Van Buren, a young engineer drove a stake in the foothills of the Blue Ridge Mountains of Georgia. His engineer's skill gave him the vision of a prophet—there, he predicted, would be the intersection point of the rail lines which were to tap Georgia and connect the developing South and West with the established East.

About the stake there grew up a trading center, Terminus . . . later a town, Marthasville . . . and then Atlanta, a city and, true to prediction, the junction point of important railways, so that it became a place of tremendous importance in the strategy of the Civil War, lost by Hood to Sherman, and reduced by that stern realist of war to an uninhabited city of smouldering ruins. But in the words of Henry W. Grady, "As ruin was never before so overwhelming, never was restoration swifter."

The new Atlanta was and is a monument to the New South. It is a great city, the center of a rich agricultural and industrial region, and the chief distribution point of the Southeast. Over 350,000 people live and work within its metropolitan area; 637 factories manufacture 1500 different articles; the Sixth Federal Reserve Bank has its headquarters there; and it is the third largest insurance city in the world.

Atlanta is also an important concentration and distribution point, not only for the Southeastern cotton crop, but also for large quantities of cotton produced west of the Mississippi River. This cotton finds a ready use for a variety of products both at home and abroad.

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a new warp, he stays right at the loom until it is okeh, whereas, before, as soon as the warp was in and a few inches woven he would leave the loom and let the weaver take care of it. Of course we know that a fixer should not leave a loom until it is running all right, but they do, and not only in one mill, but plenty of mills. We also find now that any spare time the fixer has, instead of hanging around his bench chewing the rag, he utilizes his time in the warp alley fixing up the crossed ends and helping the weaver to keep the looms going 100 per cent.

This is also the case with the battery hands. They are more careful when filling the batteries and make sure that there are no loose ends or long tails left to cause broken picks and loom stoppage as they, like the fixers, know that more cloth means more money to them. More money for them likewise means more cloth, and this in turn means more money for the mill.

The following are a few of the weaving jobs that we are now using:

18s filling, 60 looms per weaver, 40 per battery hand, filling lasts four minutes. 27s filling, 48 looms per weaver, 80 looms per battery hand, filling lasts 9 minutes.

30s filling, 40 looms per weaver, 60 per battery hand, filling lasts six minutes.

40s filling, 30 looms per weaver (broadcloth), 60 looms per battery hand, filling lasts 10 minutes.

All looms are running 150 picks per minute.

CONTRIBUTOR No. 6160.

Disagrees On Card Settings On Coarse Work.

EDITOR COTTON:

In reading over the October issue of COTTON, I notice that "CONTRIBUTOR No. 5044" answers "CONTRIBUTOR No. 4967" in reference to card settings for coarse yarns. He gives his settings and his reasons, and for the convenience of readers who do not save their copies of the magazine I am going to list both of their settings. The original ones given by "CONTRIBUTOR No. 4967" follow:

Feed plate to licker-in, 12
Mote knife, top, 10
Mote knife, bottom 7
Licker-in to cylinder, 10
Back plate to cylinder, top, 17
Back plate to cylinder, bottom, 34
Flats to cylinder, back, 12
Flats to cylinder, center, 10
Flats to cylinder, front, 10
Front plate to cylinder, top, 34
Front plate to cylinder, bottom, 27
Doffer to cylinder, 10
Doffer comb to doffer, 34
Licker-in screen, 17
Cylinder screen, front, $\frac{1}{4}$-inch.
Cylinder screen back, 34
Cylinder screen, center, 34

In the October issue, "CONTRIBUTOR No. 5044" suggests the following changes:

Feed plate to licker-in, 10
Mote knife, top, 7
Mote knife, bottom, 7
Licker-in to cylinder, 7
Back plate, top, 22
Flats, all, 10
Front plate to cylinder, (to get desired amount of strips)
Doffer to cylinder, 7
Doffer comb to doffer, 17
Cylinder screen, back, 17

I think both of these men are wrong. I have had a good many years of experience on all classes of work, having spent the greater part of my life around cards, but I never knew when they started setting the front plate to the cylinder. The front plate, or percentage plate, is set to the *flats*, not to the cylinder.

The place to set the plate is to turn a flat until it is about in the center of the top of the plate, and the plate set up or down according to the amount of waste required. If the plate is set closer to the flats, you will get more waste, and if it is set farther away from the flats, you will get less waste. I have always found that a 10/1000 gauge is just about what I wanted between the percentage plate and the flats.

We all know that with constant grinding the clothing on the cylinder will be ground down and leave the percentage or front plate away from the cylinder, but this will not do any harm other than to roll the cotton and cause the web to look flaky. This can be overcome by setting the front plate closer to the cylinder, but the proper place to set the front plate is to the flats.

This is a difficult setting, as there is not much room at this point for a gauge, and care must be taken that the gauge is not inserted too far in, as it will touch the cylinder. Just use the point of an ordinary card gauge between the bevel on the top of the front plate and the center of the flat.

It must be seen that this plate is not bent in order to get a good setting.

"CONTRIBUTOR No. 5044" says he does not believe in graduated settings for flats, but I would set them two 9s on the back and three 7s up at the front.

This contributor is wrong again when he recommends setting the doffer comb to a 17 gauge, and "CONTRIBUTOR No. 4967" is right, because if the doffer comb is set to 34, it will give the short fibers and trash an opportunity to drop out. This will increase the breaking strength and that is what this man says he is after.

There is no mention made of the flat brush in either of these two contributions. Evidently it doesn't count much with them. But to my mind it is an important part. The bristles should be set 1/32-inch in the wire of the flats.

Now, I am going to list my settings for coarse yarn work, which I know are all right, and I feel sure if they are given a fair trial they will prove all right for these men. These settings are for Saco-Lowell cards, but may be applied to other cards with but little change.

Feed plate to licker-in, 10
Mote knife, top, 17
Mote knife, bottom, 15
Licker-in to cylinder, 7
Back plate to cylinder, top, 29
Back plate to cylinder, bottom, 34
Flats to cylinder, back, two 9s
Flats to cylinder, front, three 7s
Percentage plate to flats, 10
Doffer to cylinder, 7
Licker-in screen to cylinder, top, 17
Cylinder screen, back, 34
Cylinder screen, center, 34
Cylinder screen, front, $\frac{1}{4}$-inch
Comb to doffer, 34

In closing, let me ask what in the world has become of our old friend, "WASH"? We used to hear from him lots, and I know many readers would be glad to see a contribution from him soon.

CONTRIBUTOR No. 6181.

Report of Dyers' Meeting

(Continued from page 44)

A. D. Robinson of the Union Bleachery described a method for improving the efficiency of a bleachery by offering bonuses for the successful attainment of predetermined production. He deplored the present habit of figuring costs based upon a rate of production which had only been attained or could only be attained in boom times. He said that such a method produced costs which were unfair and only resulted in a general loss to the trade.

Indigo in the South.

Professor J. E. Copenhaver, of the University of South Carolina, had obviously done considerable research work before writing his paper on the culture of indigo in the South. It was probably a surprise to some of the audience to hear that previous to the Revolution, indigo, its growth and preparation, was the main industry for the southern states. England in those days was glad to pay a subsidy for every pound of indigo shipped from the states, but that source of revenue was naturally cut off when the revolution came, and the good citizens of the Carolinas, colonists no longer, were looking around for some crop to replace indigo. They chose cotton, since the production of cotton did not produce the terrific smells which apparently even then seemed to be inseparable from the manufacture of dyes, nor did cotton require the highly skilled technical supervision necessary for the indigo. So indigo, queen of the dyestuffs, sank from a highly cultivated plant into a weed still growing wild in the Carolinas, and Professor Copenhaven, a historian and no botanist, said that he had never seen the plant itself.

Talk by J. E. Hardin.

(The paper by J. E. Hardin, general manager, Proximity Mfg. Co., appears in full on page 38 of this issue of COTTON.)

A very interesting film was shown, illustrating clearly the advantages of Sanforizing, with which every reader is familiar.

Dr. Rose, the new president of the Association, gave a paper in his usual polished and charming manner, on the building of molecules in the dye plants. He showed the development of dyestuffs in chemical plants and pointed out how, within limits, the dye chemist could change the structure of the molecule and almost produce dyestuffs of a certain shade to order.

The mercerization of cotton for strength was presented in abstract by Professor Olney. This paper, by Dr. W. D. Appel of the Bureau of Standards, covered the details necessary to produce the maximum strength in cotton goods by mercerization. A pre-treatment of the goods is essential, but the most vital factor in obtaining strength is to allow no shrinkage in the process. The temperature of the caustic should be at the freezing point of water.

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Pre-shrink your fabrics to avoid misfits, but first have them dyed right and avoid more serious dissatisfaction.

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Discussion Meeting at Spray

(Continued from page 37)

Turbines, and Heat Units," by Professor L. L. Vaughan, of North Carolina State College. After Mr. Vaughan's talk, there was a brief discussion of weaving subjects, conducted by D. F. Short, overseer weaving, Consolidated Textile Corporation, Lynchburg, Va.

Discussion on Weaving.

The first question asked by Mr. Short was, what is the cause of wild yarn around the warpers? Mr. McCombs said that this is due to the spooler hands, largely.

The next question was, whether on white work, in creeling a set at the slasher, the ends are counted in the striking comb or in the comb at the front. It seemed to be the consensus of opinion that it is better to count on the front.

The next question was whether or not it is best to run the immersion roller in the size vat as low as possible. R. T. Craven, H. M. Matthews, and others, expressed the opinion that, in running the roll as low as it will go, the size is given more time to penetrate the yarn; one man pointed out that, without an automatic system of keeping the level of the size in the box constant, that unless the roll is run as low as possible, there is a chance that the size will get below it, and affect the amount of penetration. Mr. Short was of the opinion that running the immersion roll low would give the yarn more time and opportunity to get tangled, and produce an uneven sheet.

"How do you control the temperature and humidity when you have heavy and light sley fabric in the same room?" was the next question. Mr. Short pointed out that he had just this condition, and that practically all of the time he is running some broadcloths, with a high sley, 100x60, and ordinary sheeting, in the same room. Mr. Anderson suggested that the best way would be to put the light constructions in one place in the weave room and the heavy constructions in another, where this is possible. Mr. Perry pointed out that he has both huck and terry towel work in the same room and that he has found no entirely satisfactory way of regulating the humidity for the different kinds of work. Mr. Anderson further suggested that it might be possible to size one construction a little heavier and then carry the humidity to take care of the heavy construction. Mr. Short stated that he is doing just about that; that he tries to run the humidity to conform to the broadcloth, and to take care of the sheeting by sizing it a little heavier than ordinarily. As to the percentage of humidity for broadcloth, Mr. McCombs recommended a dry bulb temperature of 83 and a wet bulb temperature of 81. Mr. Short said that he found his best relative humidity to be about 82 to 86 per cent, which gives him about a 12½ per cent moisture regain in his cloth.

"What are the best loom settings for broadcloth?" was the next question. L. V. Andrews reported the results of some loom fixers' meetings held

What you should know about

STARCHES

Warp sizing as well as printing, dyeing and finishing processes offer many problems in the use of starches, dextrines and gums. The selection of the proper products is of great importance. Listed below are selected products available for the purposes and conditions of exacting textile manufacturers.

These starches, dextrines and gums are manufactured by carefully controlled and standardized methods. Purity and uniformity are guaranteed. Economy and efficiency are attested by the constantly increasing number of users who are getting satisfactory results.

THIN BOILING STARCHES
EAGLE TWO STAR
FOXHEAD EAGLE THREE STAR
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GLOBE PEARL BUFFALO
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DEXTRINES
WHITE DARK CANARY
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IMPORTANT

Our research department will be glad to furnish additional information regarding the types and uses of these and other products as applied to the special needs of the Textile Industry. Write to—

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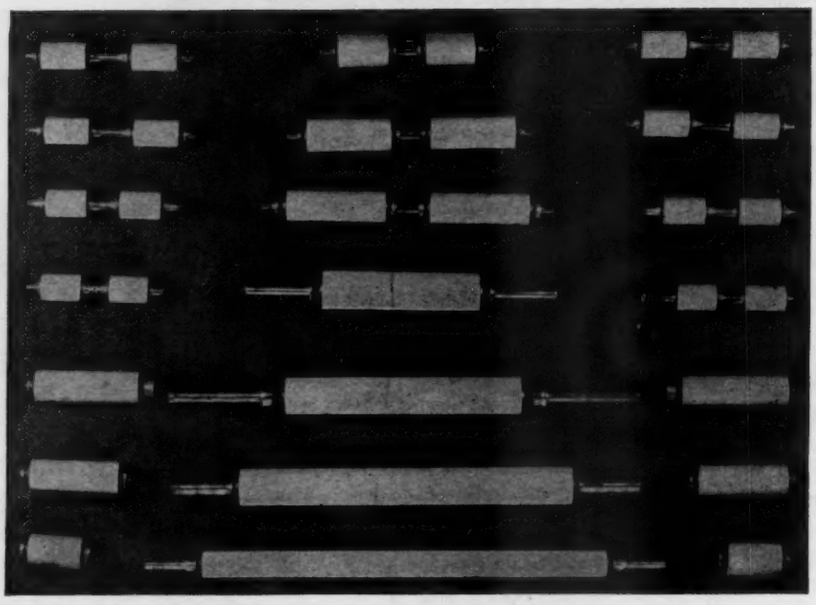
DETAILS THAT COUNT

Because Philadelphia Felts are made from the finest of raw materials . . . because they are manufactured under the best of conditions, as to experience, men and machinery . . . because they are rigidly inspected—you are assured of getting the utmost in felt cloths when you specify Philadelphia.

Philadelphia specializes in Stamping Blankets, Palmer Blankets for Sanforizing and Lapping Cloth for Printing.

Our Southern Sales Manager, Clarence B. Seal, will gladly assist you on felt cloth problems. Address inquiries to Philadelphia.



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Veeder-Root PICK COUNTERS Locate Lost Dollars

The dollars lost between estimates and final costs — the shrinkages in expected profit — where *ARE* they?

They're hidden behind lagging looms. Or covered up by inefficient weavers. They're concealed in over-runs and under-runs *NOT ACCOUNTED FOR.*

Veeder-Root Pick Counters will give an accounting for every dollar of labor-cost, every pound of material. They'll get for you — in recorded production — just what you pay for in labor and material items.

Why not equip a few looms to SEE how closely the output checks with the "input"?

Southern Office
GREENVILLE, S. C.

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HARTFORD, CONN.

at the mill several years ago. He read from a report of one meeting which recommended a setting of 2¼ inches for the reed from the fell of the cloth, with the two front harness level. He said that these suggestions were tried out, and that at a later meeting they were endorsed as being the best practical settings; that in setting the lay closer to the fell of the cloth, a rough feel was produced on the cloth, and that if it were set farther away, the yarn closed on the shuttle before it got out of the shed.

The next question asked for the best type of let-off on cotton, rayon and silk. Mr. Brakert, R. K. Craven, and Mr. Perry, all stated that they had come hoping to find some good answer to this problem, but there was no specific information given.

This virtually concluded the discussion. After the meeting, groups of the visitors went with the local superintendents to visit the various mills in the Carolina Cotton and Woolen Mills group, including the silk mill and the rug mill.

No Help Wanted!

(Continued from page 33)

customed to the scale of wages in some other industries, I can foresee some special problems you must solve to obtain widespread adoption of the movement.

Please do not misunderstand this. The Share-the-Work Movement, *per se*, is not interested in whether your mills run 48 hours or 105 hours a week. It has no views to express as to the relative efficiency of one, two or three shifts in your mills. The movement is interested in the number of hours worked by the employee. Unqualifiedly, it holds that 55 or more hours per week are excessive when so many people are out of work.

The problem of bringing the industry's production down to market requirements is for you to settle without gratuitous advice from plumbers or refiners. But in the name of common sense, do not wait for it to be decided by test of battle, by the survival of the fittest. Because a prostrate victor is not much better off than his dead enemy, who at least has no more worries. You can't stage a fight in your industry and confine it to board rooms. The real sufferers are the mill workers, with no voice in the industry's disagreement.

Why Not Raise Wages?

If the textile industry is confronted with the necessity of paying higher wages in the process of reducing unemployment, we seem to have another case of the irresistible force striking the immovable object. I have talked with men in your industry to know what they think of the possibility of raising wages and remaining in business unless the entire industry goes along with them. In all kindness, I am sure, one of them intimated that another Don Quixote had tilted at windmills, and that while the good Don has been dust these many hundred years, windmills still turn. So, too, the textile industry will be with us just as long as people wear clothes. But as an outsider looking at it in relation to our social order, I venture to predict that it will not

Lubricates Comb - Boxes From 6 to 8 Times Longer Than Liquid Oils

Make a test in your own comb-boxes and you will quickly discover why NON-FLUID OIL is now used by 7 out of every 10 of the leading textile mills.

They get better carding because NON-FLUID OIL keeps doffer and top flats in close and accurate adjustment by preventing bearing wear.

NON-FLUID OIL also helps them save money on both the lubricant cost and the labor cost of application because it lasts so much longer.

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MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

Don't

let inferior textile leathers hold up production on your looms...

FREQUENT replacements and repairs to loom leathers can mount up amazingly in lost production, money, loom fixer's time and seconds in cloth. An easy way to avoid these difficulties is to have *every loom* Bondaron -equipped! Bondaron Special Tanned Textile Leathers have been *proved* to be better and more economical in mills all over the country. In fact, a number of mill superintendents have actually cut their loom leather costs in half by using these superior, long-wearing leathers. **It will pay you to make a test in your own mill.**

Manufactured exclusively by

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Leather Curriers and Manufacturers of Textile Leathers and Belting

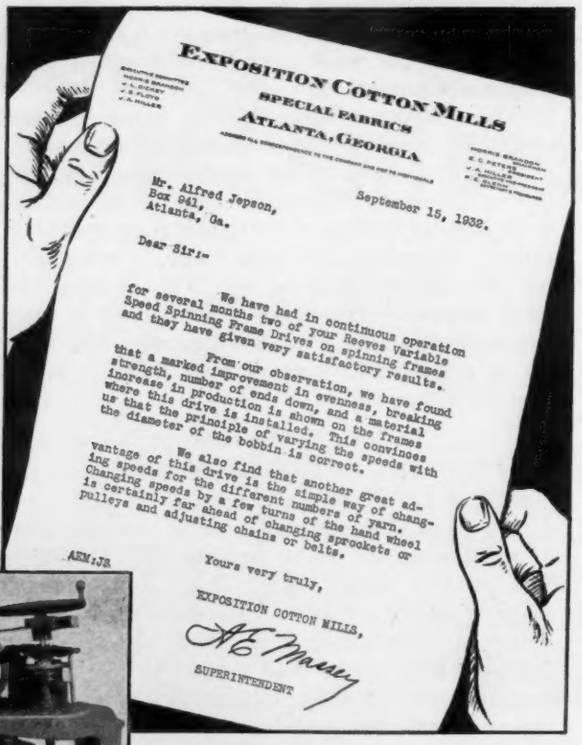
PROOF

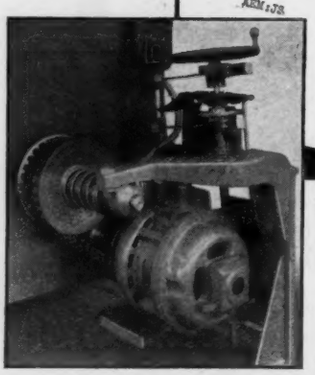
Mill Superintendent Reports Improved Yarn Quality and Increased Production with *New Variable Speed Spinning Frame Drive*

★ The REEVES Spinning and Twister Frame Drive is already proving itself in more than forty mills. This drive is demonstrating that variable speed control in ring spinning is *not only practical but indispensable.* Spindle and front roll speeds are automatically increased in proper ratio, as bobbins fill, insuring uniform tension and twist on yarn at all times. *Increased production alone pays for drive in short time.* . . . Compact. Requires no more space than ordinary constant speed individual drive. Quickly applied to either new frames or old frames. Available for either warp or filling wind.

Send for Report of Tests in Many Mills

Specific accomplishments in ring spinning, with REEVES variable speed, are graphically shown by charts and tables in a report of tests in many mills. Send for this report. See how variable speed, in comparison with constant speed, in eight mills produced yarn with less variation, greater breaking strength and 15% average increased production. Many other important performance facts.


EXPOSITION COTTON MILLS
SPECIAL FABRICS
ATLANTA, GEORGIA
Mr. Alfred Jepson,
Box 941,
Atlanta, Ga.
September 15, 1932.
Dear Sir:-
We have had in continuous operation for several months two of your Reeves Variable Speed Spinning Frame Drives on spinning frames and they have given very satisfactory results.
From our observation, we have found that a marked improvement in evenness, breaking strength, number of ends down, and a material increase in production is shown on the frames where this drive is installed. This convinces us that the principle of varying the speeds with the diameter of the bobbin is correct.
We also find that another great advantage of this drive is the simple way of changing speeds for the different numbers of yarn. Changing speeds by a few turns of the hand wheel is certainly far ahead of changing sprockets or pulleys and adjusting chains or belts.
Yours very truly,
EXPOSITION COTTON MILLS,
SUPERINTENDENT
AEM:JS



REEVES

SPINNING and TWISTER FRAME DRIVE

REEVES PULLEY CO., Columbus, Ind.

Please send copy of booklet T-300, containing data on mill tests.

COMPANY.....

NAME.....

ADDRESS.....

be operating much longer as at present; on a basis which all too frequently requires that several members of one family—father, mother and children—must work to earn that family's livelihood; that involves longer hours than the public has come to regard as a fair day's work; or that employs women and minors on night shift. Because those are matters that will not always be left to the decision of management. There is a third interested party that has the right of veto over policies inimical to the best interest of the public. It is the state. Do you gentlemen wish to invoke exercise of that power? I hope not, for you yourselves can handle such matters infinitely better out of your intimate knowledge of your business, to the mutual advantage of your industry and the public.

You are overbuilt and oversupplied with spindles for the existing market. In that respect you have the sympathy of the business I represent, because we are in the same boat as regards over-supply of raw material and the facilities for converting it into consumable products. With us also is the American farmer, who finds his wheat selling for about the tariff on that commodity. But in none of these cases, nor in other instances of oversupply, is there any sense in competition to see which can sell his output for the least money at the expense of the men and women engaged in producing it, and certainly no gain to the public.

Adam Smith lived a long time ago, at a time when industry was pretty crude. But even before there was a United States, he recorded in his *Wealth of Nations* that the goods produced by slaves cost more than those made by free men receiving wages adequate to keep them and their families comfortable.

Cutting Hours in the Oil Industry.

Perhaps you will bear with me while I refer to an experience we had in the oil industry, for the lesson it may hold. Thirty years ago the twelve-hour day was the rule and not the exception. There was a great shaking of heads when we dropped to ten hours. Those who adhered to the long day predicted the ruination of their competitors who paid the same wages for two hours' less work. Yet a few years later, the more progressive refiners went on down to an eight-hour day. The most interesting aspect of that change was that it added so little to unit cost of production that it put the eight-hour operator at no disadvantage against the competitor working longer shifts. Or I might cite the recent experience of the Kellogg Company, of Battle Creek. To help the unemployed, it changed from three eight-hour shifts to four of six hours assuming more than one-half of the increased payroll without adding to the cost of their food products.

Perhaps you can not go on a shorter work week at present wages without a slight increase in prices. I do not think that public opinion would hold that to be a calamity. There is no disposition on the part of the public to expect its wants to be supplied below the true cost of production, at the expense of the workers. As a matter of fact, the total increased cost to your industry would be spread out so thinly over hundreds of millions of pieces of goods turned

A
Real Step
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Rayon threads are much more susceptible to jagging, chaffing, and reed marks than cotton and silk threads. Because of this peculiarity the flat reed wire has a serious disadvantage.
As the warp thread enters and leaves the reed at a very slight angle, the pressure of the thread comes in contact with approximately 98% of the flat wire surfaces.
Accordingly, Steel Heddle Engineers set about developing a rayon reed that would eliminate this disadvantage. The result of their efforts is the
OVAL REED WIRE
The advantages of this construction can easily be seen in the sketch.
The point of pressure is taken away from the edge and is concentrated at a small point in the center of the face of the wire, due to the wire being oval. The thread is in contact with only approximately 50% of the oval wire surface.
Made in both Pitch Band and Soldered types.
Steel Heddle Mfg. Co
MAGNIFIED CROSS-SECTION OF FLAT REED WIRE
LARGE OR ENTIRE SURFACE OF CONTACT
THREAD IS IN CONTACT WITH APPROXIMATELY 98% OF WIRE SURFACE
MAGNIFIED CROSS SECTION OF NEW OVAL REED WIRE
EXTREMELY NARROW POINT OF CONTACT
THREAD IS IN CONTACT WITH ONLY APPROXIMATELY 50% OF WIRE SURFACE
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LARGE PRODUCTION LOW UPKEEP
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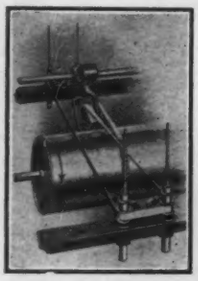

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Manufacturers and Rebuilders of Spinning Cylinders, Card Screens and Drying Cans.

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Fixer, foreman or assistant superintendent. Experienced Reading Full-Fashioned machines, seamers and loopers, also seamless. A-1 References. Address Box 97, c/o COTTON, Grant Bldg., Atlanta, Ga.

out annually as to be unnoticed by the retail purchaser. The consumer could not find it in the price of a handkerchief, shirt or a pair of pajamas.

And what would such an adjustment mean to the communities in which your plants are located and to the several states which predominate in textile manufacture? Greater purchasing power, means of course, increased sales by the merchants and more activity for the entire community. In short, a marked and general improvement in the prosperity of the state. The employee and his family would be healthier and happier with additional comforts and increased leisure.

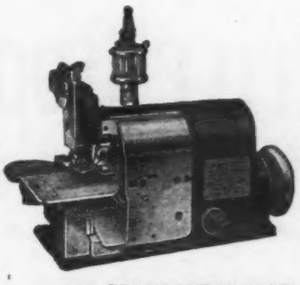
The Force of Public Opinion.

Public opinion in this country can strike with devastating force. The prosperity of a company or an entire industry over a considerable period of time depends on the retention of the public's good will. Your industry stands today at an important cross road. Will it co-operate further within its own ranks, and with outside movements such as Share-the Work for the general good? Will it continue to merit public support? Will it put its own house in order, or will it follow the dictates of short sighted selfishness and slip back again into internal conflict? I hope the answer is not in doubt, that sound judgment will prevail, and that as a result you will be able to balance production with market demand through shorter working hours for your employees. If this involves some increase in hourly or piece-work rates and the complete elimination of night work by women and minors, that should not be allowed to stand in the way. If your Institute is so weak today that it is threatened by less than 20 per cent who make the cost sheet their god, can't you strengthen it? I hope you will decide to hold fast to your reforms accomplished to date and carry them further. You can get after the misguided brothers who are following a school of economics that went out with the bustle. Organize so that the minority which is still able to invalidate the sound practice of 80 per cent of your industry will embrace constructive policies.

Such action would seem to be precedent to any widespread adoption of work sharing for the relief of your unemployed. That is my excuse, if any is needed, for talking to you with such frankness. I want to see a large part of the 100,000 idle mill operatives brought back into the family of wage earners. You gentlemen can make that possible. You can do it by putting industry on a prosperous basis. First out of the red will be those who supply the necessities or replacements. The textile industry is foremost in this class. It is in a favorable position to lead the parade to good times.

POSITION WANTED

Card Grinder wants job anywhere. Can clothe cards, fix card room machinery including H. & B. and others. Good man for run-down job but can handle any kind. Address C. G. N., 3917 Fifth Ave., Birmingham, Ala.



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HIGH SPEED TRIMMING AND OVERSEAMING OVEREDGING AND SHELL STITCH MACHINES

FOR USE IN THE FABRICATION OF KNITTED AND WOVEN GOODS OF ALL KINDS.

—200 VARIETIES FOR 200 PURPOSES—

WRITE FOR DETAILS REGARDING

MERROW STYLES 60ABB AND 60D3B MACHINES

PRODUCING A FLAT BUTTED SEAM (AS ILLUSTRATED BELOW) TO FACILITATE SUBSEQUENT PROCESSING OF TEXTILES

FINISHERS REPORT DEFINITE SAVINGS BOTH IN LABOR AND FABRIC. LET US DEMONSTRATE WORK OF THESE MACHINES ON YOUR OWN PRODUCT.

THE MERROW MACHINE COMPANY

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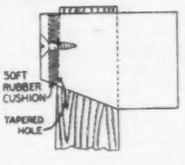
Southern Representatives:

E. W. Hollister, P. O. Box 563, Charlotte, N. C.

R. B. Moreland, P. O. Box 895, Atlanta, Ga.

The Denman D-1 Picker for Draper Looms



Here, at last, is the perfect picker for Draper Looms—the Denman D-1—which has a short bevel, a flexible hard rubber shock pad, a tapered picker stick hole to eliminate undue strain during application. The layers of soft rubber placed along the back side of the loop eliminate strains set up in the fabric cover and act as a constant tension device to keep picker tight on stick.

Find out more about these improved accessories. Write us today.

DENMAN TIRE & RUBBER CO., WARREN, OHIO
Sou. Rep.: Terrell Machine Co., Charlotte, N. C.

DENMAN TEXTILE ACCESSORIES

Property Protection IS PROFIT PROTECTION

Cyclone—not a type of fence—but fence made exclusively by Cyclone Fence Company and identified by this trademark

CYCLONE FENCE IS STANDARD FOR TEXTILE PROPERTY PROTECTION

Cyclone Fence

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ATLANTA, GA. NEWARK, N. J.
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SUBSIDIARY OF UNITED STATES STEEL CORPORATION

TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

55. Interpretation of Analysis for the Layman—An eight page booklet explaining what the various terms used in fatty oil and sulfonated oil analysis mean, enabling the ordinary textile man without chemical education to interpret the various chemical analyses. National Oil Products Co., Harrison, N. J.

56. Technical Service Data—giving information on processes of textile manufacture in the use of oils, softeners, etc. National Oil Poducts Co., Harrison, N. J.

57. Reducing Textile Costs and Troubles telling all about the benefits of water treatment. Permutit Co., 440 Fourth Ave., New York, N. Y.

62. Rubber Products for the Textile Industry—a 40-page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan Inc., Passaic, N. J.

63. S-W Paint Standardization Plan—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

64. Efficiency and Performance of SKF Roller Bearing Spindles—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., 40 East 34th St., New York, N. Y.

65. Why Cooper Hewittt Light is Better Than Daylight—a 16-page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176, describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

69. Monel Metal Equipment for the Textile Industry—a 50-page buyer's guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

70. Fafnir Ball Bearings for One-Process Pickers—outlining the advantages of ball bearings in guaranteeing smooth accurate motion particularly on eveners, as well as uninterrupted production, ease of operation and cleanliness of bearing units throughout the one-process pickers. Fafnir Bearing Company, New Britain, Conn.

71. Short Cuts to Power Transmission—A 74-page handbook for belt users, incorporating the most important phases of practical belting practices, including considerations in belt buying, care of belts, making belt joints, belt calculations, causes of belt troubles, etc. Flexible Steel Lacing Company, 4916 Lexington Street, Chicago, Ill.

72. The Merrow Butted Seam—A 16-page booklet defining and illustrating the Butted seam, describing its prop rties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

73. New Reeves Catalog T-32—A treatise on efficiency speed control—including valuable information of special importance to textile industry men and production executives outlining advanced methods of speed regulation. Reeves Pulley Company, Columbus, Indiana.

74. Colgate-Palmolive-Peet Bulletin No. T-22—booklet giving complete details of degumming and dyeing in a single bath with soap. Colgate-Palmolive-Peet Co., 919 North Michigan Ave., Chicago, Illinois.

75. The Facts About Armstrong's Seamless Cork Cots—A helpful book containing plain facts, cost studies based on actual mill records, expert analysis, complete details on the advantages of Armstrong's Seamless Cork Cots. Armstrong Cork & Insulation Co., 923 Arch Street, Lancaster, Pa.

76. Jointite Cork Products—Giving information on the uses of cork for insulation purposes. including useful data, specifications, tables, and charts for roof insulation, refrigeration, sound-proofing, heat prevention, heat conservation, vibration deadening, and condensation prevention. It contains concise and valuable data on all of these subjects, as well as photographs and drawings showing specific examples of various types of construction, test curves, etc. Copy sent free to anyone interested in any of these subjects. Mundet Cork Corp., 450 Seventh Ave., New York, N. Y.

77. Bulletin T 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages, and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

78. Booklet L 1289 A, Loom Motors and Control—giving details of the low installation, operating and maintenance cost of Westinghouse Loom Motors. Westinghouse Electric & Manufacturing Company, Room 2 N, East Pittsburgh, Pa.

87. Morehead Back-to-Boiler System—An interesting 44 page booklet, giving helpful information regarding the Morehead Back-to Boiler System. Morehead Manufacturing Co., Department C, Detroit, Michigan.

88. Dayton Cog Belt Catalog—a 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

89. Lubriplate, An Important Advancement in Lubrication—describing this new lubricant, its qualities, uses and advantages. Lubriplate Corporation, 405 Lexington Ave., New York City.

90. Atwood Booklet. Describing Atwood Winders, twisters, wire swifts, and various types of feed rolls—useful to throwsters interested in learning the principal features of various Atwood machines. Atwood Machine Co., Stonington, Conn.

1. Cotton Picking, Carding and Spinning—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling. By Whitin Machine Works, Whitinsville, Mass.

2. Pepperell Equipment—10 page illustrated booklet showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments, installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

8. "Textile Brushes"—10 page booklet illustrating brushes for cleaning every part of mill. By Gastonia Brush Co., Gastonia, N. C.

10. Leathers, Textile—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

15. The Powers System of Thermostatic Control—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

20. Bleaching, Dyeing, Finishing and Printing Textile Goods—70-page booklet containing interesting iinformation on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

22. Tragasol and Its Uses—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

25. "Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

28. Akron Belting.—Practical Rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading Pa. (This company also issues parts catalog for Reading full fashioned machine with general information on subject of full fashioned knitting.)

41. Budget Control—40-page booklet showing how each part of business budget should be prepared and principles of its effective operation together with a summary of benefits. By Ernst & Ernst, accountants, 27 Cedar Street, New York, N. Y. (This company also has available booklets on Standard Costs, Business Control Through Analysis, The Better Wage, Factors to Consider in Working Out Mergers.)

42. Textiles and the Telephone Typewriter—6 page booklet on telephone typewriter service for communication between mills and selling houses. By American Tel. and Tel. Co., Long Lines Department, Atlanta, Ga.

44. Points of Interest in and Around Atlanta—36 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

45. Fidelity Universal Ribbers—A forty-eight page booklet showing the advantages and many styles of ribbed fabric and describing in detail and illustrating the latest developments in ribbers. Sent free on request by Fidelity Machine Co., 3903 Frankford Ave., Philadelphia, Pa.

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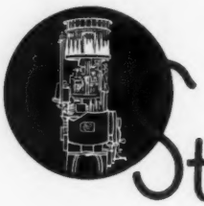

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Practical Tests for Efficiency of Soaps, Oils, Solvents, Scouring and Penetrating Agents

By Mynhart O. Brueckner.

ON page 84 of the August issue, "Contributor No. 6130" submitted an inquiry as to the best practical methods for testing the efficiency of various soaps, soluble oils, solvents, scouring compounds, penetrating agents, etc.

The accompanying discussion, prepared in answer to that inquiry, has been held for use as an article instead of a contribution to the "Knitting Kinks" department, in view of the very thorough manner in which Mr. Brueckner discusses the subjects involved. Other readers are invited to submit further queries or opinions concerning any point covered.—The Editor.

EXPERIENCE has taught many of us that a chemical analysis of a soap, solvent, penetrating oil or scouring compound used in a modern dyehouse means nothing at all unless we have in these various commodities certain components which are best suited to the work for which we intend to use them.

There is no one soap or oil which will perform a series of definite jobs, but we can find, by suitable trials or tests, that a definite soap or oil will perform a definite work in an efficient way. It is also possible to incorporate into such compounds, various things which will enable one particular soap or oil, to perform a series of jobs at the same time, but when dealing with an article of this nature, we must test it for each individual job and also under conditions where it has this series of jobs to perform in one operation.

Except for special work, it is not necessary for the dyer to know what oils or fats were used to make the soap or oil he is using; in fact, many dyers would not grasp the significance of such information and therefore would not know how to proceed to use the product even if they knew what it contained. When purchasing such things, the integrity of the manufacturer of such products should be taken into consideration, and before a purchase is made, the manufacturer should be familiar with the problem for which his product is to be used. This not only protects the buyer, but also protects the firm making the product because it may have been called upon to deliver an article under a common name, and, out of ignorance as to its use the firm may have to witness a crucifixion of its products because of its failure to perform the specific job. If the manufacturer had known just what work was expected of it he might have suggested an entirely different article. To illustrate this. The writer had the experience of testing out a certain enzyme that was to be used to degum tram silk at a low temperature in a fabric containing acetate cellulose. The idea was, that by liquifying the sericin and waxes present in the tram silk, at low temperature, the silk would be suitably degummed and at the same time, the desirable properties of the acetate yarn would not be destroyed. Through some mistake, the enzyme sent for the trial did not do the work, and our report was unsatisfactory, so we did not consider this method again.

It developed, later on, that the particular enzyme sent for our experiments was not intended for this kind of work, but due to a misrepresentation of the facts we had used one that was intended for use on cotton goods, and of course this explained the miserable failure we had with the product. The whole story was that the party offering the product to the mill was not familiar with the problem, and if the mistake had not been discovered, someone would have suffered, not through carelessness, but through ignorance. This example is given to confirm the statement that was made earlier in this paper.

The function of a soap as used in a dyehouse may be varied. It may be used to degum silk, and, if so, the purpose of it is to free the silk of the sericin or natural silk gum as well as to free the fiber of such oils and softeners as have been added by the persons preparing the silk to be used by the knitter or weaver to facilitate winding, knitting or weaving, and it must clean the goods in the same sense as washing cleanses our clothes when we send them to a laundry; that is, it must remove all dirt or foreign matter that may have been picked up in the process of manufacture of the fabric or yarn.

In the case where soap is used in connection with scouring of rayons, there is no natural gum to remove, but usually there is an abundance of mechanically added oils and softeners which are put there for a definite purpose—sometimes for a deceptive purpose. In this case, the soap must act wholly as a cleaner, and not as a degummer, and, usually in the case of rayons, the soap must be able to hold in suspension, much larger quantities of oils and impurities of an unsaponified nature than in the case of pure silk.

In either case, we must choose the soap which acts best under the conditions to which it is subjected, and, because it degums silk and leaves it in a good condition does not mean that it will cleanse rayon thoroughly. Likewise, a soap, which may leave rayon in a good condition after scouring, may ruin a lot of pure silk if it is used to degum such fibers.

"Anonymous Bargains"—or Symbols of Value?

More and more wise retailers are turning away from the great national "bargain hunt". This is a reflection of the woman consumer's shrewd unbelief in the ability of stores to keep on marking down their prices day after day, year after year. Even she is wise enough to know that bargain day is over—wise enough to pin her faith once more on recognized symbols of known quality that provide her with definite standards by which to measure values.

One such symbol of established value is the word *Chardonize,* appearing on stocking, underwear or dress labels, identifying the products as made of Chardonize dull lustre yarn. To many millions of women, whose patronage and confidence are necessary to sustain the financial life of your merchant customers, this famous quality mark means fashion perfect dullness and tested serviceability.

Let *made of Chardonize* add its assurance of textile quality to your own name's assurance of style and workmanship. Follow the trend of today's most successful merchandising away from confidence-killing "anonymous bargains" toward confidence-building value-symbols. • TUBIZE CHATILLON CORPORATION, 2 Park Avenue, New York. *Makers of viscose, nitrocellulose and acetate yarns.*

Tubize

To illustrate this: We may use a soap that cleans rayon very well at low temperatures, but, use it to degum silk, at the same temperature, and the result would be disastrous, not because the soap is not suitable, but to remove mechanically added oils and softeners from rayon does not usually require high temperatures. However, to remove silk gum or sericin requires a temperature of 180 degrees F. or over, not on account of the soap, but because of the nature of the impurities with which we deal. Therefore, if we have a soap that acts efficiently at low temperature in removing oils from rayon, this same soap may break down under higher temperatures and, though it is called soap, could not be used to degum silk.

Tests for Soaps

Conducting a practical test to determine whether or not the soap to be used is satisfactory, is difficult unless some more or less truly chemical tests are made upon the product to give us an intelligent start into our investigation. A satisfactory method, however, which does not require a chemist's training, is to weigh out an amount of goods, soap and water in proportions that approach conditions found in the dye machines and which, also, are economical so far as quantities of materials are concerned. The goods are scoured or degummed in this and careful attention is paid to how well the oils are removed, held in suspension and in the case of silk, how well it is degummed and in what length of time. After this, the samples are dried and inspected for feel, odor and appearance, and a rough idea can be gained as to the value of the soap used in the experiment. After a series of such tests, we can arrive at definite figures concerning the amounts of the soap to use to gain certain results and we can calculate the value of the soap in dollars and cents with reference to the work done by it.

It is often found that after the preliminary experiments stated, we can accomplish better results by using assistants in the scouring or degumming bath. These may be in the form of alkaline detergents, solvents or penetrants. The tests must then be made with known weights of fabric, water, soaps, solvents and assistants, and again we must decide just what combinations are most efficient and economical. This method, while crude, is very practical, and many things can be found out about the products of which we do not know the chemical composition.

It is desirable to conduct these preliminary experiments in glass beakers, which enables us to watch the process as it proceeds. We cannot tell in the case of pure silk, when it is degummed, but we can see just what happened to those tinting shades commonly found in yarns today, and, also, we can observe whether or not the oils in the yarn are held in suspension or whether they are removed and float to the top of the bath, to be distributed later upon the goods when the bath is dropped, as would be the case in a practical machine test. Also, by using the glass beaker method, we can save our scouring or boiling-off bath and watch what happens as the bath cools down. This oftentimes gives us some valuable information. By this, I mean that oftentimes a given soap or soap combination may clean our goods well at elevated temperatures, but when the temperature drops, the suspension of oil in soap may break and we have an oily layer on top of the bath, which, if allowed to settle back upon our goods, would cause much trouble.

The usual practice, of course, is to flush such a scouring or boil-off bath, but after that, the bath must be drained and fresh water must be introduced to wash the goods free of the traces of the removed oils, waxes and impurities, and, because most dyehouses do not have a supply of hot water available, the introduction of water at a reduced temperature may cause a scum to be deposited upon the goods which then acts as a filter and holds all of such previously removed foreign matters upon it.

Testing the Soluble Oils

When determining the value of a soluble oil it is difficult for anyone to identify the nature of the oil in the average dyehouse. However, the value of an oil may be determined so far as its wetting out ability, stability and suitability for dyeing purposes are concerned, by the same method as outlined for soaps. A rapid test for determining the money value or total fatty matter present in a group of oils may be made by weighing out an exact amount of the oil to be tested and pouring it into a graduated flask or beaker, being careful to rinse out with hot water, the original vessel in which the weighing was done in order to remove all of the oil.

The graduate should be marked to read in tenths of a cubic centimeter and to keep the analysis in the same system, the weights should be in grams. The amount of water added should be about twice the volume of oil used for the test. After mixing the oil and water thoroughly, there should be added about one and a quarter the weight of oil of sulphuric acid —of about 55 degrees Be., (Sp.Gr. 1.61) being careful to add the acid slowly and with constant agitation of the mixture. After this oil-water-acid combination is well mixed, allow it to stand for some time, until the separated fats come to the top in an oily layer. Allow this to stand until the solution cools, and read off directly the total number of cubic centimeters of fat that have collected at the top of the flask or graduate. Assuming that we have started with a fifty gram sample of oil, the total fat will be the number of cubic centimeters of fat collected (weight of separated fat) divided by fifty and multiplied by one hundred which will give the percentage of fat in the original oil. This method is not entirely accurate, but gives, within a few percent, the fat content of the oil and serves as a rough basis of comparison for other oils being considered.

This method can also be used where a laboratory is not included in the dyehouse, since it requires no great outlay of equipment nor any special skill in manipulation to conduct the test. Where equipment is available, the better plan would be to determine the water present by drying in an oven and weighing the amount by difference, or, where this method is not suitable because of the nature of the oils in-

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volved, the Xylene distillation method can be used. The last two methods require chemical equipment which is not found ordinarily in the average hosiery dyehouse and so do not have a real practical value in most dyehouses.

Determining the Best Solvent

To make a practical test upon a solvent, the method to pursue is similar to that described for soap—using the glass beaker method and then drying the sample after washing thoroughly and inspecting for feel, odor and for positive visual signs that the solvent has removed those foreign matters that were meant to be removed.

In making tests upon penetrants, we are dealing with those solvents or soap and solvent mixtures that have the property of being able to saturate cotton goods or rayon goods with a liquid which acts upon those waxes and oils in the yarns and remove them or cause them to be diluted in the scouring or dyebath so that their presence in the yarns themselves is practically nil, and by causing such a removal or dilution, we can proceed to dye, bleach or finish our fabric with whatever we may choose and have level,

To proceed with a practical test for determining the value of such assistants to the dyeing operation, we need only to weigh out a known amount of the penetrating mixture and add to it enough water to give us about the same ratio as we would have when using it in economical proportions in actual practice. After we have made up, say a one-percent solution of the penetrant being tested in water, we take a piece of fabric or skein of yarn and drop it into this mixture and actually time the wetting-out operation. This time can then be compared with other concentrations of the same penetrant in water or may be compared to other penetrants which may be under consideration.

Finding the Best Penetrant

The choice of what penetrant to use if we are making comparative tests should be that one which produces the quickest results with the lowest cost and percentage used. It will be found that often the product that bears the highest cost per pound may be the most economical to use from a standpoint of efficiency and actual amounts used to produce certain results. It is very often found that by using a small percentage of a suitable penetrating agent or solvent, the amounts of soaps or oils necessary to perform a certain amount of work, may be greatly decreased because such assistants increase the efficiency in cleaning of soaps and oils.

The writer has found that a reliable test for penetrating agents is to wind off a skein of cotton yarn from a cone, using a standard yarn reel if one is available. This skein of 120 yards of cotton yarn is doubled back upon itself until we have a small skein of yarn about two inches in diameter. A piece of the yarn is then tied around the skein and around a small weight. (A one-gram brass weight is suitable.) The weighted skein is now dropped into a tall graduate or beaker that contains the penetrant and water in the proportions which we think are suitable and economical. The skein will float for a time and then gradually or quickly sink to the bottom or perhaps half way there as the cotton becomes wet-out. The time is noted, and after we have tried different concentrations of the penetrants in water and perhaps the same concentrations upon various penetrants under consideration, we have a fairly accurate comparative test of the assistants under consideration.

The foregoing general outline given for determining the value and efficiency of soaps, soluble oils, solvents and penetrating agents is simple enough to be done in nearly any dyehouse where there is a lack of equipment or a laboratory is not included in the place. The results from tests conducted along these lines, of course, are not conclusive evidence that those materials under test will or will not perform certain work satisfactorily, but in general, such tests will give a good idea as to what to expect from certain concentrations, mixtures and combinations of the various soaps, oils, solvents and penetrants that are offered to the dyer today, and it can at least be decided whether or not we are using something in our scouring and dyeing process that is really helping the cause.

Usually, knowing what a certain product is made of and what it contains does not help the dyer. He is more interested in knowing what a product will do. After finding out that a certain product will perform a given task in the scouring or dyeing bath, it is a matter of a few practical tests to determine just how costly or economical such materials are and I hope the foregoing outline will be of some value to those who are trying to operate dyehouses where a laboratory is not available for more extensive work.

Experience may be compared to a book in which is recorded the work of every overseer and superintendent. Each day a new chapter is added to this great volume. Each book has an index that we should refer to in everything we do—what we do today should be intelligently guided by what we did in the past—but, sad to say, so many of us go blundering along as if we had no book of experience to refer to. Then we think that overseer or superintendent who passes by us is "lucky."

Do you THINK, *or are you just naturally careless? While out hunting one day I asked a man who was carrying a hammerless gun if the "safety" was on, and bless my life! if he didn't pull both triggers to find out.*

That's the way some overseers go about their work. They jump at the first thought that comes to mind, and pull both triggers, and then by golly if the "safety" (superintendent) is not on, they tear things all to pieces.

The man who flies into a rage and cusses everybody out when something goes wrong will soon discover that he has got to fly into a rage every time he wants something done or his men won't know whether he really means what he is saying or not.

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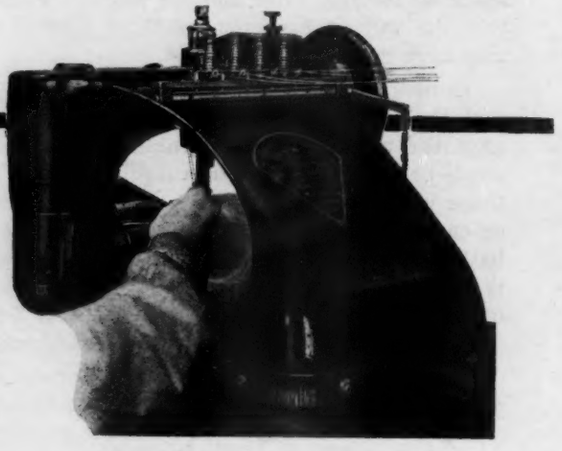

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UNION Special Class 35700 is the perfected feed-off-the-arm felling machine for tubular seaming operations on shirts, pajamas, dresses, lingerie and similar garments.

A comfortable operating position with generous room for the operator's arm and full vision of the work enables inexperienced operators to quickly equal and soon surpass expert operators working on other types of machines.

Quiet, efficient operation at the high speed of 3750 R.P.M. results in production increases ranging from 13% to 41% as shown by certified engineering surveys. An equally outstanding achievement of the exclusive design is the perfection of the work produced.

Let us give you proof of the superiority of Class 35700 and 35800 (for heavy fabrics) machines.

UNION SPECIAL MACHINE CO.

400 North Franklin Street Chicago, Illinois

C-1-Gray

Wants Information on Seamer Production

Also asks for figures as to needle breakage in seaming full-fashioned work.

EDITOR COTTON:

I would like very much to see in "KNITTING KINKS" some information with regard to production in full-fashioned seaming.

I should like to know what an operator should be expected to do per hour on a Union Special seamer, running 7-thread silk picot top. Also, what production would be considered reasonable on a 4-thread silk picot top number.

We find that we are breaking one needle to 20 dozen seamed, and we should like very much to have this information from other manufacturers in order to compare with their results.

CONTRIBUTOR No. 6185.

Figuring Speeds on Banner Machines

EDITOR COTTON:

We note in a recent issue of COTTON that "CONTRIBUTOR No. 6087" wants information regarding the speed of Banner machines. It is noted that he wishes information about driving Banner machines with 7-inch pulleys and has asked other questions about the motor drive. We advise that technical questions with regard to chain drives can best be referred to manufacturers of this equipment.

For a unit of 25 to 30 Banner machines, 3-hp. drives are usually equipped with a chain 1½-inch wide and ½-inch pitch. The chain drive manufacturers recommend a medium size sprocket or pinion and we would suggest one with 17 teeth, and using the formula below it is then possible to determine the number of teeth on the gear when the desired speed shaft is known:

Formula No. 1.

$$\frac{\text{Motor speed} \times \text{teeth on pinion}}{\text{teeth on gear}} = \text{shaft speed (r.p.m.)}$$

The drive pulleys of a Banner machine are considered to be 7-inch diameter, for purposes of calculating speed. The idle pulley and the middle pulley would then operate at drive shaft speed, since both pulleys are 7-inch in diameter. The middle pulley drives the cylinder at equal speed when making the heel and toe. In the leg and foot the belt is shifted to the inner pulley which drives the cylinder through gearing at a higher speed. The gear ratio is:

$$\frac{29T}{26T} \times \frac{29T}{26T}$$

giving a cylinder speed of about 50 r.p.m. greater than the shaft speed. Known values can then be substituted in the following equations:

Formula No. 2.

$$\frac{\text{Shaft speed} \times \text{7-inch (drive pulley)}}{\text{7-inch (Banner machine pulley)}} = \text{Speed of outside pulley on Banner machine and heel and toe cylinder speed (r.p.m.)}$$

Formula No. 3.

$$\frac{\text{Outside pulley} \times 29}{26} \times \frac{29}{26} = \text{Cylinder speed on leg and foot, Banner machine.}$$

Assuming that for a given hose, the cylinder speed in the leg and foot of 225 r.p.m. is required, we first obtain the speed of the idle pulley on the Banner machine by working the equation below:

Formula No. 4. Cylinder speed 225 r.p.m.

$$\frac{225 \times 26}{29} \times \frac{26}{29} = 180.8 \text{ r.p.m., idle pulley speed, heel and toe and shaft drive speed.}$$

By determining the fully loaded speed of the motor and assuming that a 17-tooth pinion will be used, by using the figure of 180.8 r.p.m. shaft speed, it is possible to determine the number of teeth required on the driving gear for the line shaft, which in this case is 107.

Formula No. 5.

$$\frac{1140 \text{ (motor r.p.m.)} \times 17T}{180.8} = 107 \text{ teeth on gear.}$$

A table furnished by the chain drive manufacturer lists the diameter of the various gears so that it is only necessary to consider the number of teeth. The diameter of the gears varies widely depending upon the pitch of the chain which is used on the gear.

If your contributor will advise the particular type

of machine under consideration, we will recommend the best operating speed. If he has a motor and will advise its fully loaded speed we will then be in a position to determine any of the specifications necessary for ordering a chain drive.

CONTRIBUTOR No. 6179.

A Discussion of the Parts of Scott & Williams Knitting Machines

Plates VI, VII and VIII.

(This continues the series of short articles discussing the machine parts on Scott & Williams machines, by taking up in order the various plates in the manufacturers' catalog with which all men using this make of machine are familiar. The first article, on page 126 of the October issue, covered Plate I, Plate II, and Plate III; and the second artcle, on page 86 of the November issue, covered Plate IV. The third article on page 97 of the December issue, took up the parts shown on Plate V. It is suggested that in reading these discussions, the reader turn to the plate in question in the catalog and refer to it while reading the comments found in these articles. Furthermore, it will be a good idea to clip these discussions and file them in the catalog along with the plates to which they refer.

The numbers in parentheses following the names of parts are the same numbers used by the manufacturers in referring to the parts in the catalog.—The Editor.)

EDITOR COTTON:

Continuing the discussion of parts shown on the various plates of the Scott & Williams parts catalog, I will attempt in this article to cover in a general way the parts shown on Plates VI, VII, and VIII, beginning with those on Plate VI.

Cams, cams and more cams seems to be the sum and substance of everything shown on Plates VI and VII. The machine builders merely term them as Large Drum Cams and Small Drum Cams. It would be quite a task to find names for all of these different cams. Really these cams, when placed on the pattern drum as a complete set in their respective places, can be termed as the "brains" of the whole machine. Practically everything the machine does is controlled directly or indirectly by the drum cams and they must be kept in tip-top shape at all times, to keep the machines turning out a maximum of good work.

There are but few cams on the B-3 and B-5 machines which require very much attention, however, on Model K, H H or ES machines, a great deal more attention must be given to the various drum cams.

A great many of these cams look very much alike at first glance, but after examining them more closely a great deal of difference will be noted in them. Some are made of cast iron while others are made of tool steel so they can be hardened all the way through and their usefulness assured for a long time.

The various steps, up and down, of the different drum cams should not be changed from the height and shape as made by the machine builder. On certain cams a sudden or abrupt rise or fall is necessary while on others a very gradual rise is needed to give the proper motion to certain levers, cams or other mechanism. In some cases, changing the shape of cams may bring temporary relief of certain troubles but will not be a permanent cure. Generally, carelessness or unnecessary cam grinding will turn a minor trouble into a major disaster.

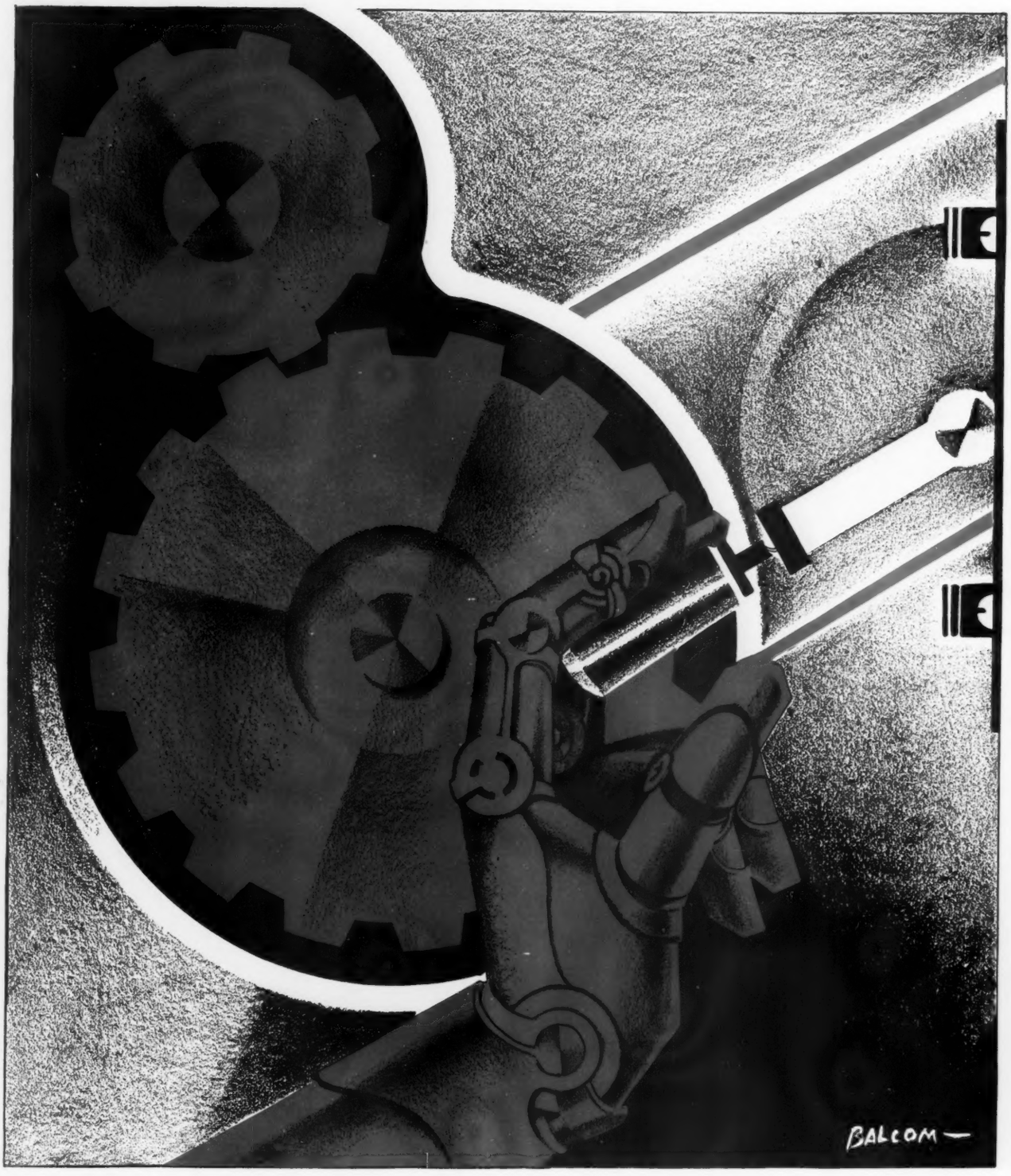
Drum cams should by all means be kept tight to the drum and the screw heads should be flush with the top surface of the cam. Careless counter-sinking of drum cams will bring no end of machine trouble. A good pointer in connection with steel drum cams is to use screws which will project ¼-inch through the drum so in case a screw is sheared off it will be a simple matter to get hold of the stub with a pair of pliers on the inside of the drum, remove it, and avoid drilling it out.

Grinding the back end of drum cams is one of the most common forms of cam abuse, for in most cases this can be avoided by adjustments. For example, if the main pawl plate should wear 1/32-inch or slip back that much, it may affect one or two cams causing the thrust bars to drop too late or not drop at all on the proper drum move. These cams can be shortened and a temporary cure effected. A little more wear and several more cams must be shortened, and so on, when suddenly the machine fixer finds himself in a peck of trouble. After checking up the drum movements carefully he finds the worn or slipped main pawl plate and he makes the necessary adjustments. Everything should be okeh now and the fixer puts the machine through the various moves and to his surprise he finds more trouble; several cams are too short now that his main pawl plate is properly adjusted, and it becomes necessary to replace the shortened cams with new ones of proper length. The one thing to keep in mind is that drum cams do not get longer through constant use but the various parts which make the drum move do wear and get shorter, causing late timing of the drum cams in relation to the thrust bars.

It is not uncommon on B-3 machines or B-5 machines to have the thrust bar which moves the stitch cam bracket in and out cut a trench in the steel cam which raises and lowers the thrust bar. Steel drum cams (42614, 42715, and 42718) and others will eventually wear out through constant use. However, they will give very good service and pay for themselves if they are not abused.

In closing the discussion on drum cams, I would like to repeat: Keep them tight. If they wear quickly, investigate. There's a good reason for it, and the less grinding they get the more service they will give.

What has been said about drum cams on Plates VI and VII will also apply to the few cams on Plate VIII. The various tooth plates shown on Plate VIII are not troublesome if properly cared for. True, they will wear out, become nicked or work loose, but these ailments are not difficult to find or correct. A tooth plate does but one thing, and that is to supply auxiliary drum moves in addition to the movement made by the main pawl and plate. These additional moves



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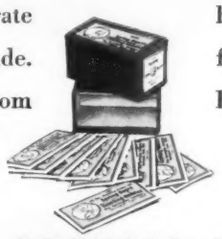
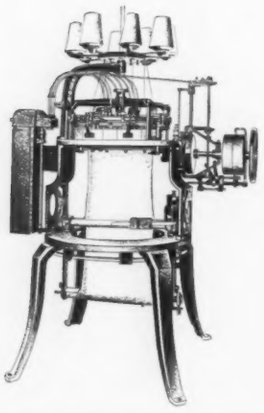


TORRINGTON *SPRING BEARD* NEEDLES

THE MACHINE . . .



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must be accurately made and in proper co-ordination with main pawl movement. Nicked tooth plates will cause extra moves to be made by the auxiliary pawl plate and the remedy is to remove the plate and polish out the nicks, keeping in mind that tooth plates are case-hardened and must therefore be re-hardened if polishing has removed the hardened surface. Failure to do this will cause the auxiliary pawl plate to cut a tooth plate up very rapidly and give a lot of trouble.

Frequently machine fixers will get into trouble by using tooth plate (42880) in place of (42431) or vice versa. They do look very much alike, yet it is unwise to attempt substitutions. The distance between teeth on the various longer plates must not be changed nor should the position of the plates in relation to drum be altered. While this is being written the radio announcer is saying, "See your dentist at least twice a year", etc., and that good advice translated into machine language as this writer sees it would be, "Check your tooth plates at least four times a year; don't increase your production cost by letting tooth plates go unattended until they give trouble."

The next discussion will cover the parts shown on Plate IX.

CONTRIBUTOR NO. 6038.

A Method of Re-grinding Points on Selector Levers

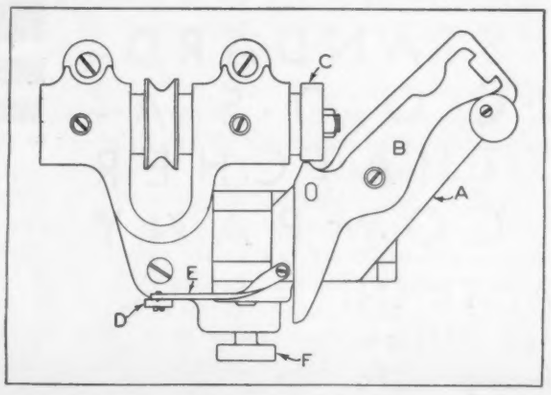
Copies of this man's previous description of his selector gauge will be furnished on request. . .

EDITOR COTTON:

I would like to describe in this letter a "kink" which we have developed for the purpose of accurately re-grinding the point of wear on a selector finger on Scott & Williams seamless machines. This work may be done by adapting a knife grinder used in connection with the "Record" looper.

Please refer to the accompanying sketch. Plate *A* is made of ⅛-inch flat iron and is mounted on the cross-feed member of the grinder by means of two flat-head 8/32 screws. To do this it is necessary to plane off the sloping part of the cross-feed member to the extent which will cause the selector lever when in position on Plate *A* to be on a radial line in respect to the emery wheel *C*.

The plate *A* is given a back-and-forth movement by means of lever *D* through the connector *E*, and its position toward the wheel *C* is made by the adjusting wheel *F*.



A set of 25 of these selector fingers may be ground at one setting of the grinder and will show no variation due to wear of the wheel *C* when tested with the gauge heretofore described for these levers. (See page 84, August 1932 COTTON, for description of this gauge.)

The emery wheel *C* should be of fine hard grit, of 1⅛-inch diameter and ⅜-inch face.

The writer has used this grinder with very fine results since finishing it some time ago. Nearly every mill having "Record" loopers will have one of these grinders, or they may be obtained readily.

CONTRIBUTOR NO. 6134.

The Place of Boiled-Off Silk

EDITOR COTTON:

It seems to me that "CONTRIBUTOR NO. 6093" has asked and answered his own question regarding the use of boiled-off silk in the manufacture of full-fashioned hosiery, in his letter in your July issue.

Boiled-off silk has been employed as a splicing yarn by many full-fashioned manufacturers in times past. I think this was done for two good reasons. First, for the reason that plaiting over cotton in the high spliced heel and double sole was found difficult, and more uniform results in dyeing could be obtained by using silk instead of cotton; however, the results were not altogether satisfactory due to the fact that boiled-off silk rarely ever dyes exactly the same tone as the gum silk from which it is knit. Second, a desire to make heavy re-inforced heels, toes and soles on machines which were not easily adapted to heavy fabric construction.

Modern full-fashioned machines have largely overcome the plaiting problem and the heavy knitting problem, and I would say that best results will be obtained where pure silk heels, toes and soles are desired, by using gum silk splicing thread from the same lot and quality of silk as that used in the main part of the stocking. It is of course possible and practical to use a lower grade of silk for splicing yarn, but it should have the same known affinity for dyestuffs and should be treated with the same soaking solution as the main yarn of the stocking, or at least with soaking solutions which will give uniform behavior in the dyeing operation.

There may have been some practice of using boiled-off silk for making the whole stocking, but this process has undoubtedly been used in a very limited way. I would say that boiled-off silk, unless specially treated with sizing compound after having been de-gummed, would give more unsatisfactory results in every respect than properly treated and handled gum silk will give. In fact, I know of no good reason for using boiled-off silk in the manufacture of full-fashioned hosiery.

It is of course admitted that much ingrain hosiery is manufactured. Here, however, the condition is entirely different, and usually ingrain silk is after-treated and weighted to make it satisfactory for knitting purposes. The advantages of ingrain

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knitting lie largely in the fact that indanthrene or vat colors may be employed in dyeing the skein silk, which gives a much more steadfast color than dip dyeing. This, however, in the modern manufacture of full-fashioned hosiery has its disadvantages, due to the fact that such colors do not lend themselves favorably to easy stripping, and much stripping of colors has to be done in the manufacture of full-fashioned hosiery today. Again, ingrain knitting had its supporters through the fact that ingrain hosiery had a softer and more lustrous finish than dip dyed hosiery. However, today, the trend is strongly toward high twist, low luster and hard finish, and the advantages once in favor of ingrain hosiery so far as finish and feel are concerned have disappeared.

It is admitted that a much tighter finished fabric can be produced from boiled-off silk. But it is also entirely possible to knit a gum silk so as to produce a fabric entirely too tight for any practical purposes. Therefore, the argument of tighter knitting is not favorable to boiled-off silk, while properly selected and treated gum silk will undoubtedly produce a better fabric in every respect.

CONTRIBUTOR NO. 6125.

Answers on Breakouts, Etc.

EDITOR COTTON:

In reply to the several questions of "CONTRIBUTOR NO 6091", will say first that the break-outs at transfer corners are caused by several different things, notably topper trimming ravelings too close when shearing the topping machine; second, by the topper sometimes splitting the stitch or putting two loops on one point in the topping operation; and third, by the knitter trimming the end of the silk too close at the transfer line from the thread introduced on the first course of the footer.

His second question referred to the trend of French heels in full-fashioned hosiery toward the narrower and shorter construction, and he asked what could be done in designing this type of heel to retain the style advantage of the narrower width and yet give the consumer maximum wear. With the modern graduating devices or the so-called curved heel attachments there should be no trouble in making an ample heel pocket, and a large heel pocket will do away with the strain to which he refers. Many full-fashioned stockings are designed with heel tabs too narrow and too many needles are narrowed out in the heel. We strongly advise a liberal heel pocket.

His third question asked what characteristics of a full-fashioned needle are most important, and what is the best way to test various lots of needles. The best method of securing needles which are consistently of the same specifications is to patronize one reputable source of supply. Even then it is possible that some particular lot of needles may be found to be off from standard specifications, particularly in regard to temper—sometimes too hard and again too soft. Such needles will be taken up without question by a reputable needle manufacturer.

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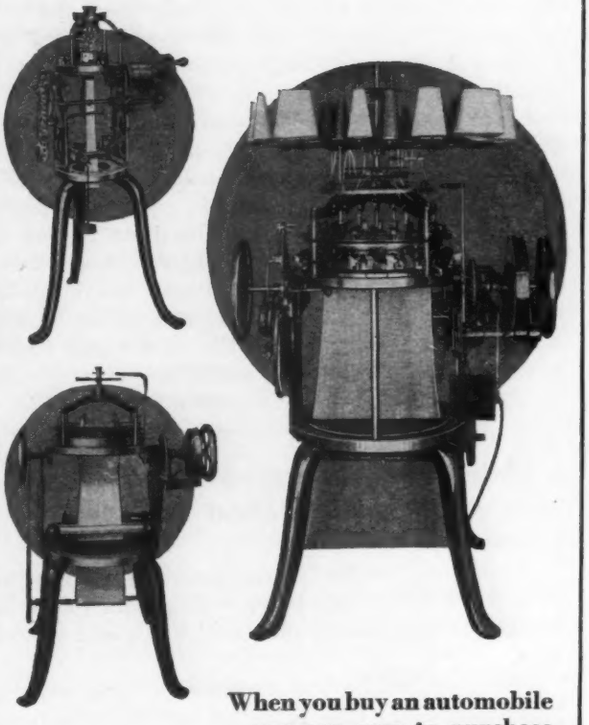

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I feel that the most important characteristics of a full-fashioned needle should be uniformity in length and uniformity in temper. The length of the needle can be easily determined by a gauge which can be easily made by any machine fixer. Such a gauge being merely a small block of brass or steel with a hole bored in it the same size as the butt of the needle. The needle can then be swung to pass a gauge block of standard length; needles passing the gauge block without touching to be thrown out as short, and needles which will not pass without bending the needles to be thrown out as long.

We feel, however, that very little of such irregularity will now be found in standard makes of needles.

We think that the most important characteristic of a needle is the temper, particularly of the head and beard. The beard ought to be so tempered that it will readily spring back to normal opening even though closely depressed into the slot a number of times, and the beard should also be of such ductility as to be able to twist it around the shank of the needle without breaking. It should also be possible to lift the beard of the needle to about a 90-degree angle before it snaps at the bend or top of the needle, and the shank of the needle should be so tempered as to bend freely without breaking, and yet hard enough not to bend out of position by some of the extraordinary shocks the needle may receive in the regular operation of knitting.

CONTRIBUTOR NO. 6120.

Methods of Operating Full-Fashioned Plants on Short Time.

EDITOR COTTON:

I am going to answer the questions of "CONTRIBUTOR NO. 6090" in this letter, with regard to the best method of operating a full-fashioned plant on short time.

The problem he has presented is one on which practically every full-fashioned hosiery manufacturer has to pass judgment during these times. Part schedules are often difficult at their best, and there are two angles which have to be looked upon in deciding just what should be done for a partial plant close-down. The first side is the human element and the other is the economical element. From the human side, it is best to give a certain amount of work to every operator rather than concentrate it upon a few. On the other hand, from the efficiency side, it is much better to put the production into the hands of a few. We have had this problem ourselves and have leaned toward the human side for our answer, but we have done it in a way that we believe has been an efficient and economical means.

Instead of splitting up the operation of the machine over a 24-hour stretch—and incidentally we have been working day and night up to about a months ago—we have decided to divide work among our knitters by running one week with one set of knitters and the next week with another set of knitters. In other words, our machines are still operating day and night, but we do not have all of them in operation. In this way we can concentrate our supervision, control our silk humidification, have less fixing and at the same time divide the work proportionately among the operators.

We could have attempted a day-time run only, but due to the fact that with some of the equipment on our machines, it is necessary to operate some of them day and night on styles that are selling, to balance our production, so that we could not eliminate the night shift entirely. In this manner we run both day and night, but only a part of our machines are operating. We make a change of knitters each week so that everyone gets the opportunity of bringing home a pay envelope every other week.

We have always maintained a night shift and have never paid an additional sum for night work. As a matter of fact, quite a number of our knitters prefer night work as they can work longer hours and their machines operate at greater efficiency.

CONTRIBUTOR NO. 6103.

EDITOR COTTON:

I have gone over the question submitted by "CONTRIBUTOR NO. 6090" concerning the best method of operating a full-fashioned plant, on two shifts, on a short time basis.

I would prefer day shift operation only under these conditions, having the first shift operator come in the early part of the week and the second shift operator working the latter part of the week, if the hours were such as to permit full time operation for several days for each operator. This would apply, of course, to the leggers. There are certain economies in operation which on short time schedule could be obtained by operation on this plan provided, of course, that certain conditions existed which would permit the savings in light, bettter working conditions for the operator, which should increase his efficiency, and a reduction in non-productive items.

If silk is wound and conditioned properly no difficulty should be experienced in starting up in the morning after an eight-hour run or even shorter run of say six or seven hours per day, nor should there be any difficulty in controlling lengths of the stockings under these conditions. If care is taken to maintain proper room temperature, say three or four hours before the machines start in the morning, there should be no problem with the machines at starting time.

As far as the footing set-up is concerned, we think that probably a plan could be worked out whereby footers could operate every other week. In other words, it could be arranged to have half of the footers in one week to take care of footing requirements, and the other half the week following. This would eliminate frequent changes of silk, winding extra set-ups, and still permit the footer to maintain quality production.

Working up silk in the manner outlined by "CONTRIBUTOR 6090" is not desirable, since it would be bound to result in lack of uniformity in the various sections, which means of course, more trouble and more seconds in the finishing department.

CONTRIBUTOR NO. 6107.

THE KNIT GOODS MARKETS . .

WHAT at times seemed like a possible precarious situation in the full-fashioned hosiery market was sidetracked around the middle of December and the stage was set for better fundamental conditions in the first quarter of 1933 than those of the corresponding period of 1932.

It was the boast of some department managers of leading retail stores that they had cancelled past-due-delivery orders in November; had bought nothing since, and would close the year without the addition of a dozen pairs, banking on the use of ornate cartons of three pairs of stockings each for a clean-up during the Christmas selling. Where this policy was adhered to, it is understood in the trade, stores had their lightest hosiery inventory and lightest sales in years.

As indicating the conservatism or, perhaps, more properly speaking, the cheese-paring policy of some merchandise managers, the buyer for a department store covering an entire city block placed a rush order early in December for 10 dozens of silk stockings at $6 a dozen—a matter of a $60 commitment—but was compelled to go up front for ten days with a report of his stock, each day, before the merchandise head gave the order his O.K.

While hosiery may have been given rather rough treatment by czars in retailing, the result is obvious, it is pointed out, that it served to influence manufacturers to proceed more cautiously, and that the looked-for surplus stocks for the January-February sales probably will not be available to calculating buyers. Toward the end of December it appeared to manufacturers who had been steadily engaged on orders that prospects loomed for more nearly stable prices and a moderate increase in demand from jobbers and the more important large retailing establishments.

With numbers of northern mills operating day and night and large retailers reducing inventories, instead of replenishing weak stocks, there was some alarm manifest in the trade. A casual survey uncovered a number of idle mills, which had a quieting influence, and it developed that many of the mills employing two shifts of operatives to the time limit were producing only against orders. This continued throughout the greater part of December. So, while there is probably some unsold hosiery in manufacturers' hands, the stocks of goods in the gray which had been envisioned by certain elements will, it was believed, prove insignificant. Orders increased as the interval before the holiday shutdown shortened. While large retailers were having a buying moratorium, the small shops that specialize in price hosiery were steadily placing orders, and it was from that source that mills were receiving much of their late seasonal business.

According to the testimony of managements of some of the more pretentious establishments, the consuming public had been educated to the proposal that fairly good hosiery at around 59 cents a pair was available, and that therefore sales of what had been stocked for Christmas selling did not move as freely as was expected. Comparatively few gift boxes containing three pairs each were taken, it was stated in Philadelphia stores. Because of economic conditions, it was explained, women were limiting their gifts of hosiery, in a surprising number of cases, to a single pair. Left-overs to be offered in January-February sales, it was stated by an observer of the trend, will comprise mainly good styles of stockings to be blended with displays of promotional goods bought for the occasion.

Manufacturers, generally speaking, seemed to be in no great hurry about going after spring business. Some felt that it would be time for that when buyers show their hands. Premature offerings, it was reasoned, would have a tendency to weaken the position of mills. There has been considerable speculation as to the course of prices. Advances in raw silk dictated upward revisions in silk goods, but the disposition of too many manufacturers to "plunge" with output, on the slightest indication of demand, caused others to fear lower quotations. At least one mill set out early in September to anticipate a recession.

"We are offering nothing for spring," said the sales manager of a mill whose branded line is widely known but is affected by keen competition from the unbranded of various manufacturers. "What we are doing is to revise our entire line and adapt several quality numbers to prices which we know women will not object to pay. We may make some new prices—not in a spirit of beating some other mill to it, but for increasing our sales. We probably will stress service rather than 'vapor' chiffons."

It was explained, as a pretext for a more attractive price list, that the mill cannot be operated profitably on current prices except on a capacity basis. What is liable to happen as a part of the project is to scale the usual quotations on 39-gauge stockings and put 42-gauge in a price range calculated to bring about substitution of this gauge for 39s, the mills reserving 45-gauge for the more aristocratic place in the concern's line. The sales management of this mill may be unnecessarily alarmed, it was commented by a manufacturer with whom its program was discussed, for an opinion, and who was in accord with the view that it might be a part of wisdom to not rush the market with spring offerings.

There develops a difference of opinion as to the correctness of the view expressed by the managing director of the National Association of Hosiery and Underwear Manufacturers that "by now we must have learned that low prices do not create a large use of hosiery." Strawbridge & Clothier department store in Philadelphia, in December, ran a sale of a nationally advertised branded line at which it was stated by a person speaking for the management, "we sold more women's hosiery units and dol-

lar value, than in any previous one-day sale in the history of the store." In reply to a question as to the factor in the unprecedented volume, it was stated price had much to do with it, but it must be taken into consideration, it was stated, "that the brand is one with which women are quite familiar." The stocking was specially priced at 50 cents for the sale.

Keeping in mind the very great increase in the number of exclusively hosiery stores since the beginning of the price drop around three and a half years ago, trade authorities appear of the opinion that low prices increase sales of hosiery of presumably known value, but are disastrous to manufacturers and merchants, while an inescapable evil of competition, and that eventually the magic of low price loses its potency as a factor in sales. One mistake of unwarranted lowering of prices, it has been pointed out, lies in the fact that more cohesiveness than at present exists among manufacturers is necessary to restore proper levels. And unless checked by broader demand or rising costs of raw and semi-raw materials, it is admitted by manufacturers who are self-confessed offenders, lowering of prices tends to further increase production, for the reason, as might be instanced in the case of some mills last month, that in order to adjust actual operating cost to selling price it was necessary for them to operate every legger to capacity for long days, for reducing overhead.

Giving consideration to the number of leggers that each year must be scrapped, said a mill manager, it is not inappropriate to operate leggers day and night when the set-up is but two leggers per footer, but for the good of the trade, he continued, "we believe it unwise to run plants day and night where the set-up is three-and-one."

The intentions of manufacturers thus far indicated as to new installation during 1933 make it appear that more new equipment will be set up in American full-fashioned mills next year than in either 1930 or 1931. The inference in the trade is that in most mills planning installations there is to be a considerable weeding out of antiques that ceased to be profitable producers. The Nomend Hosiery Co. in a recent announcement that it had scrapped 32 machines of 39-gauge, stated that from a merchandising standpoint they had come to be regarded as a "liability against the good-will of the company". Scrapping of 98 full-fashioned machines in the past two years was announced by the Phoenix Knitting Co. of Milwaukee. "More scrapping of machines and less about prices would be helpful," observed a manufacturer in Lebanon, Pa.

More New Installation of Full Fashioned Machinery Indicated for 1933— Old Equipment to be Scrapped.

It can be stated, on the authority of a person in position to know, that new installations will be well scattered as between the southern field and Pennsylvania and New Jersey. The purpose is, not to increase potential production, but to average down in operating cost by the employment of modern machines, obviously embodying many improvements in construction and flexibility and providing for certain economies. According to the same authority, numbers of machines approaching obsolescence are to be dismantled and sold as scrap.

While no intimation is given as to the type of machines predominating in the contracts for 1933 installation, it is the opinion of manufacturers that 45-gauge will be largely specified for the more generally exploited types of stockings, and that 51-gauge equipment is intended to fill the popular price fine gauge field. In discussions of gauge, 48- is regarded as representing but a small per cent of the proposed new installation. A Philadelphia manufacturer announces having contracted for three sets of three-and-one 42-gauge machines.

There is noted less inquiry for second hand full-fashioned hosiery machines, and with fewer buyers, prices offered have undergone a sharp decline, according to dealers in used equipment having plants and single units for sale. The value of used machines on the market, usually the coarser gauge, necessarily lessens with the age of the machines. Unless wanted for experimental purposes, it is stated by manufacturers, most of the second-hand machinery available at prevailing low offers figures so high in operating cost that at current prices for hosiery their installation is regarded prohibitive.

Two full-fashioned plants in Philadelphia are to be removed from the city if their owners can find suitable sites. One would prefer a southern location, the other desiring to locate in the Philadelphia area. Both are influenced by high cost of operation at the present sites.

Used circular knitting machinery for half-hose is in almost constant demand, and sales of some considerable lots have been made in the past few months to scattered manufacturers. Inquiry for equipment for early 1933 delivery comes from both hosiery and underwear manufacturers.

Market Awaits Style Changes.

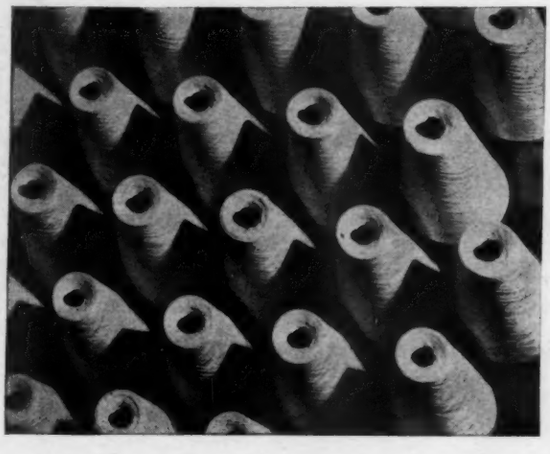
While prospective hosiery style has been engaging the attention of manufacturers and department managers in the large stores and fashionable shops, little of a tangible informative character seems to have been arrived at except in matter of color, and that is said to be not well received, since gray is cited as a strong possibility. Gray is said by some buyers of long experience in retailing to never have lasted long enough to be really interesting. They have had trouble in matching up gray shades for costumes, it is stated, and besides, it is one of the hardest shades to sell except for special matching. Popular light shades are declared by professed observers to promote sales of women's stockings, although objected to because so easily soiled.

Early in 1932 meshes and lace stockings were coming favorites. Both had a protracted run, considering, and meshes for a time yielded substantial profits. Lace first disappeared from the picture. Meshes lingered and, remote from the fashionable shopping sections, still are displayed, and occasionally a pair is disposed of. But they are decreed by stylists to be out of the reckoning as 1933 possibili-

To Knitters

WHO WANT TO MAKE PROFITS BY OFFERING REAL VALUE . . . .

DIXIE helps you prove your value when it comes to selling your numbers. Value is style, comfort and wear. Here is how Dixie durene puts these into your merchandise.



Style because Dixie durene is carefully spun from long stapled Delta cotton, then drawn through chemical solutions under automatically controlled tension. This gives it a permanent high lustre — beautiful and in tune with today's style.

Comfort because this same controlled mercerization partially opens the cotton cells increasing Dixie durene's absorption. Comfort because Dixie durene is warm-air dryed, making it soft and lofty.

Wear because Dixie durene is cotton—long stapled, improved, beautiful, but still cotton, with all of cotton's known ability to stand abrasion, to wash, and to hold—through months of use or disuse.

When you want to make a drive for profits by cutting down seconds and production delays due to faulty yarn, and by offering real values, put these facts to work for you. It is easy—use Dixie durene in sound constructions.

DIXIE MERCERIZING COMPANY

CHATTANOOGA, TENNESSEE

DIXIE DURENE · A Product of Controlled Manufacture

DAWN BREAKS EARLIER *ON THE HEIGHTS*

THE economic night is waning. Even to the dwellers on the plains and in the valleys of human endeavor, the faint streamers that herald the day are growing brighter and casting the first long shadows of prophecy.

To the watchers on the heights—manufacturers and merchants, bankers and builders—the slow, up-creeping light of coming prosperity has, for some time, been visible.

In this period of return to plain and simple facts, we have seen those who feel their responsibilities to their fellows, take new strength and faith from this revealing light and square their shoulders to the tasks of sane and unhysterical leadership which will be as much needed in the full glare of economic noon as it was in the hours before dawn.

John Stillman

JAMES E. MITCHELL COMPANY

Cotton Yarn Merchants for Three Generations

122 CHESTNUT STREET, PHILADELPHIA

ties. If anything strictly new has been devised, the trade either knows nothing of it or feels it is too early to let the public into the secret.

Ingrain silk staged a return for fall and early winter, at the lowest prices at which they ever were sold. It was an occasion when the style conscious woman was able to wear fine gauge full-fashioned ingrain with Jacquard hems at the cost, a few years ago, of just plain average quality dipdyed from what now are considered coarse gauge machines. Clocks, always depended upon as a temporary style expedient when innovations and novelties are being awaited, are pushed to the fore by some concerns, and may be accepted as a detour from staples. The Oscar Nebel Company has elaborated on clocks by working into them the personal initial of the woman who wears the stocking. This is conceded to be the last word thus far in individuality in women's hosiery. There remains to be produced clocks in which the monogram of the wearer of the stocking is woven, knitted or jacquarded.

Speculation Rife as to Non-Run Future.

In the absence of some decided innovation for spring, it is an opinion of certain elemnts of the trade that the Schwartz patent non-run type of stocking will be taken up by enough smart stores to give it a prominent place in the season's vogue. It never had a fair start, it is an almost universal admission in the trade, being rushed to retailers before having reached an acceptable approach to perfection. Quite recent models show less of mesh effect and the complaint of inadequate elasticity seems to have been overcome. It seems likely, however, that those in control of the patents covering the production and distribution of the Schwartz non-run stocking may have to revise their notions as to price and price control.

Originally intended to sell for $1.35 a pair, this type of non-run has been selling recently for odd prices between one dollar and $1.20. Another type, that produced by the Gotham Silk Hosiery Co., is reported receiving the same cordial reception as the Berkshire and Apex lines, made under patents of the Textile Patents Corporation. The Gotham company, like the other concerns, is said to be filling an encouraging number of re-orders.

Another type of stocking admittedly immune from runners has a full-fashioned foot on a cut-and-sewn leg, the construction of the leg being a virtual guarantee in itself that runners cannot occur. It is designed by the Artcraft Silk Hosiery Mills, Inc., the manufacturer, to sell for $1.50 a pair. While carrying no suggestion of mesh, this stocking, to which the name "Run-no-more" has been given, is referred to as not intended to take the place of chiffon, being recommended, rather, for service wear.

This recommendation is viewed as in line with the thought that if women chose their stockings for service instead of sheerness calculated to simulate the nude, they would be rewarded with fewer runners at but a trifle increase in cost over that for the sheer.

Of major importance to manufacturers, as they look to the new-born year for promised relief from precarious conditions, is price. Raw silk is higher than at the beginning of November, while the prices of some lines of hosiery, notably 42-gauge 4-thread, are lower, and in the reaching out for business, some manufacturers have reduced their quotations to a level lower than the basis of $4.25 a dozen for 42-gauge four thread silk. Buyers for some retail establishments have intimated they expect tc buy 45-gauge stockings in January for less than the December low quotations for standard numbers. Among manufacturers there is a growing belief that the better types of silk stockings will command higher prices, that the typical $4.25 stocking of December with which the trade was prone to make comparison is showing no profit for manufacturers and will be moved back to $4.50.

Berkshire Price Reduction Followed by Resignation of John Nash McCullaugh as $55,000 General Manager.

For the reason that the Berkshire Knitting Mills announced a 25 cent reduction around December 1, John Nash McCullaugh, at that time general manager of the Berkshire, was associated directly by a large element of the trade with the responsibility for the cut, which particularly was a surprise to practically all manufacturers and most buyers, since it was announced a few days after a meeting of manufacturers in New York in which the keynote of the discussions as to policy was an inhibition against price cutting. A strong protest against the reduction reached the Berkshire promptly from numbers of manufacturers.

It is common report in the trade that Mr. McCullaugh's resignation followed almost immediately the responsibility for the cut was mutually admitted. He was recognized as supreme in authority in matters of Berkshire policy. As his salary was $55,000, announcement of his resignation was the signal for a sensation the like of which never had been experienced in the American hosiery industry.

Bulk Buying of Light Weight Underwear Reserved for Early Weeks of New Year.

While some little business in light weight knitted underwear was placed late in November, some of the usually more active manufacturers deferred offering their men's lines in a general way until after the middle of December. It was conceded in the trade that their delay cost them no orders, for, as stated by one of the better known Eastern manufacturers, two weeks were consumed in booking two small orders and getting a tentative promise of four orders.

Jobbers have placed re-orders for lightweights for immediate delivery, retailers apparently reducing their stocks during the late fall warm period when heavy weights were lingering on the shelves of many stores. It appeared that the heavy weight business for 1932 was a matter of the past, so far as related to deliveries, but the mid-December cold snap caused scampering for the more seasonal garments. Further inroads were made on heavies, however, by medium weights being more extensively adopted for

The "READING"
FULL-FASHIONED KNITTING MACHINE

TEXTILE MACHINE WORKS
READING, PA.

Our responsibility to the leaders

ROYERSFORD NEEDLES have played an important role in the development of Full-Fashioned Hosiery in America. Royersford engineers have kept well in advance of the demand for greater speed, and finer, cleaner, sheerer fabrics. That we are America's largest producers of Spring-Beard Needles, and that nearly all the leading makers of fine quality Silk Stockings are standardized on ROYERSFORD, is a tribute to *unvarying performance*.

ROYERSFORD NEEDLE WORKS, INC.
Royersford, Pennsylvania

ROYERSFORD NEEDLES
STANDARD STEEL AND DURAKROME

all-year wear.

Much of the business in summer weights during December was for immediate and nearby delivery for taking care of consumer demand, while orders for spring lagged. Buyers are reported eager to operate, but complain they are held in check by their merchandise managers. The situation is said to have been somewhat strengthened, however, by stability in cotton and the absence of any material shaking by reason of the surprising crop report. Had cotton declined sharply, as might have been expected in view of the indicated increase of over 700,000 bales over the November estimated yield, trading in summer underwear probably would not have made the modest start reported by a relatively few manufacturers.

See Business Ripening for Development.

Leading jobbers and manufacturers are in accord with the view that business will develop rapidly in January, and that it would have been a mistake to postpone the opening until after the turn of the year. By this time manufacturers have been able to form some idea of what the trade intends to buy. The outlook for men's light weight union suits is said to be not dazzling, buyers for the trade being of the opinion that man's preference is running stronger to shorts and shirts. A concern knitting union suits finds interest divided between sleeveless and half-sleeve types in knee length, on the strictly athletic order. The larger bookings are of knitted athletic shirts for wear with cut-and-sewn shorts.

Reports that some of the smaller mills last month withdrew certain numbers in their light weight lines were not received seriously by those who had failed to book more than sample orders. Statements of a sold-up condition in a few mills may have been founded on fact, but it was the common impression that real buying of summer weights would be postponed until January, at the earliest, and that the market was ripe for development of some briskness. Competition among jobbers seems likely to be spirited, judging from the orders for samples which manufacturers report have been placed, indicating that salesmen are to be on the road early.

Women's Cotton Underwear Stronger in Favor.

Reports from the primary markets for women's underwear indicate the cotton garments are coming into greater favor. This is ascribed in part to economic conditions, and in some extent to simply a change in women's notions as to underwear fabric. In any event, it is stated in representative market circles, cotton was showing better in the orders for spring.

It was the opinion of one underwear department manager for a large retail establishment that while low prices popularized rayon underwear for women, competition among manufacturers operating in low price garments resulted in further cheapening of both fabric and designing, until users of the low price garments turned to cotton for greater service. But, say persons who have watched the trend and profess to know the reasons therefor, rayon under-

"BROSCO"
SILK FINISHES

—have been, and are being used with marked success by leading Silk Hosiery Manufacturers throughout this Country and in Canada.

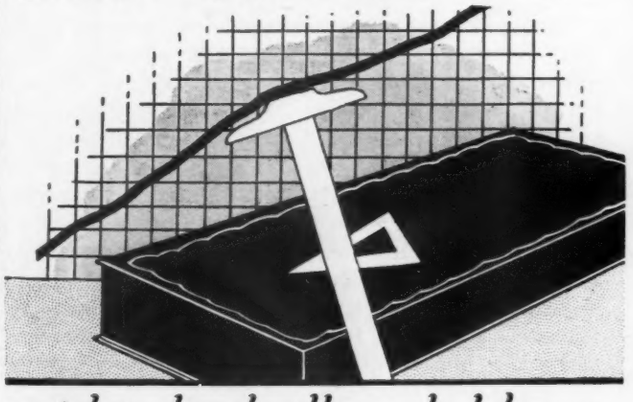
To meet the current demand for LOW LUSTRE, plus Water and Spot Proofing, Softness and Elasticity,—the following "BROSCO" SILK FINISHES (in proper combination) are highly recommended:

"Brosco" Dull Finish—Finishing Compound S.P.
"Brosco" Scroop Oil,—and remember, only "one bath" is needed.

We would be glad to send further details—or if you prefer, have one of our practical men call.

Brosco Product
SCHOLLER BROS. INC.
MFGRS. OF TEXTILE SOAPS, SOFTENERS, SULPHONATED OILS & SPECIALTIES
AMBER and WESTMORELAND STS., PHILADELPHIA, PA.
and in ST. CATHARINES, ONTARIO, CANADA

Boost Your Sales Curve



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Higher sales curves follow when proper care is taken in styling boxes for textile products. Paper boxes by Old Dominion are scientifically designed to your individual needs by experts who know merchandising as well as box making. Write nearest plant for samples, prices.

OLD DOMINION BOX COMPANY, INC.
Lynchburg, Va.
Winston-Salem, N. C. Burlington, N. C. Ashboro, N. C.
Charlotte, N. C.

quality OLD DOMINION Paper Boxes

wear will not only be improved but will be presented in more attractive form than when at its height in consumer favor. But manufacturers producing both types say they look for more substantial business in cottons in the early part of 1933 than that of recent years.

A report which made its appearance a few weeks ago to the effect that chain stores and catalog houses were expected to operate in January in heavy weight underwear, while causing no flurry, was believed to have originated in a suggestion from manufacturer circles that as mills would need business as a means of meeting an economic condition, a substantial price advantage might possibly accrue to early buyers.

The source of the suggestion is not disclosed. One factor attributes it to one of the more powerful southern mills. The theory back of the proposal is that by putting mill help to work, with minimum delay, more jobs will the sooner be created for others, by reason of the purchasing ability of those in employment, and that while profits for manufacturers giving a buying advantage to distributors would be impaired, there would be a return in better communal morale. The danger from recourse to such an expedient, even for purely humane reasons, it was pointed out, would be a tendency on the part of rival manufacturers to compete in price and establish a dangerous level of values.

"The chain stores may be willing to do some early buying, but neither buyer nor seller is expected to approach the matter from philanthropic motives", says a buyer for other interests.

Mills Making Lastex Bathing Suits in Reported Lead in Activity in Knitted Outerwear Trades.

Bathing suit manufacturers have entered upon what promises to be a short but active season. Excepting a half dozen or more mills licensed to use lastex and several makers of nationally advertised branded lines, in the usual construction, who booked business from retailers before mills distributing to jobbers got fairly started, the trade made little progress in December. The formal opening in the previous month was not immediately productive of results, and, as in previous years when buyers tarried, reports of price cutting made their appearance. These were followed by the withdrawal of the relatively few buyers who may have intended to place the usual early orders.

Some manufacturers reported to have hastily reduced their opening prices made prompt denial. Some gave the charge no attention, but there was a general slowing down in the knitted outerwear industry. One of the acknowledged leaders, an accused price cutter, closed the plant because of the unwillingness of buyers to pay the manufacturer's prices, said to rate as low as the lowest.

As the looked-for December trading in bathing suits did not materialize, demand for worsted yarns receded and spinners, eager for orders, became involved in price competition. This had the effect of complicating the situation for manufacturer and distributor of swim suits, and activity was further delayed. The mills may have their revenge in declination of late orders, for with anything like a normal "hard-times season," the January start probably will not give manufacturers time in which to turn off sufficient production.

Lastex has proved the season's sensation in bathing suits. This latest application of the elastic yarn in either of several fibers has apparently given to the few concerns licensed to use it in swim suits an indicated strong lead in matter of early sales. As its use is restricted to a very limited number of manufacturers in each of a number of trades and fabrics, there will be no difficulty, for the present, in maintaining prices, in contrast with the situation as to unprotected fibers and construction.

The Lastex bathing suits distributed through jobbers by the M. & M. Knitting Mills, Philadelphia, were first offered for sale in New York a week before Christmas. Other manufacturers selling to jobbers who have been licensed to use lastex in bathing suits are the Franklin Sweater Mills, Philadelphia, and Greenhill & Daniel, Brooklyn. Three manufacturers selling their branded lines direct to the retail trade also have been licensed to knit lastex bathing suits, and each is understood to have taken a fair amount of business, while mills distributing swim garments in which lastex is not used were reported last month in need of business for January plant operations.

The instant reception accorded to lastex bathing suits in the jobbing and retail trades was regarded a factor in the waiting attitude of buyers of the hitherto standard lines. Since lastex suits doubtless will command steady prices showing a fair return for wholesalers and retailers, it seems they will be free from the withering competition to which the regularly constructed suits are again subjected, with some well established mills among others reaching out wildly for orders, while the lastex mills are having offered to them all the orders they probably will be able to take care of.

It appeared certain a few weeks ago that distributors wanting to add lastex swim suits to their lines will not long defer placing their orders. The innovation has given to a selective small part of the knitted outerwear trade what one manufacturer refers to as "release from competitive slavery".

The M M line of "form fitting" lastex bathing suits is shown in zephyr and worsted, lavish in novelty effect and fancy back.

Jobbers have been dilatory with their orders for women's sweaters for spring. Ordinarily mills would have been busily engaged in December with initial orders. Some few mills stated they looked for no business before the middle of January. Others, which received early orders, reported they were principally for samples for jobbers' road salesmen.

So many young men can't seem to get it into their noble heads that promotion almost invariably comes to the man who DESERVES *it, who has worked for it. They all want it all right, but when it comes to going down after the* WORK *to get it, that is not so funny. Too many of us confuse ambition with a desire to have things handed to us on a silver platter.*

AVONDALE MILLS

Sycamore, Ala. — Sylacauga, Ala.

OFFER THE ADVANTAGES OF LARGE FACILITIES — QUICK SERVICE

THEY CAN READILY SUPPLY ANY TWIST, PLY, OR PUT-UP IN CARDED OR DOUBLE CARDED YARNS FOR KNITTING, WEAVING OR INSULATING IN ALL NUMBERS FROM 3's TO 40's.

Selling Agents:

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BONE-DRY
HOSIERY FINISHING BOARDS

PEARSON
HARD MAPLE
HOSIERY FINISHING BOARDS

THAT WORK ABSOLUTELY SMOOTH

The famous bone-dry, unshrinkable, well finished boards that give universal satisfaction.

Especially recommended for silk and chiffon hosiery. Satisfied users the country over. A list of these users gladly furnished to any mill on request.

JOSEPH T. PEARSON & SONS CO.
Kensington & E. Boston Aves., Philadelphia, Pa.

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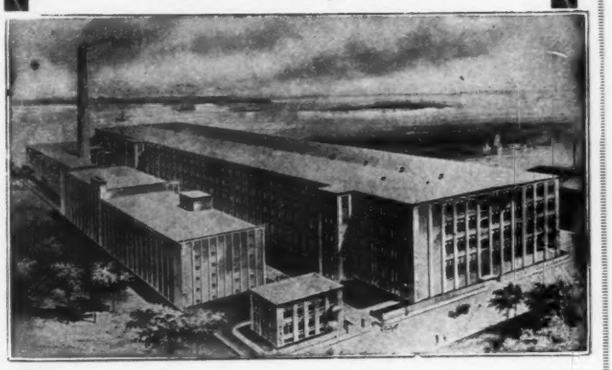
The Audit Bureau of Circulations was formed by large advertisers and publishers to put a ban on circulation secrets. Publications willing to have their records checked by impartial auditors belong to the Bureau,, and the number of papers they sell is published to the world. No one doubts the "A. B. C." report. It eliminates unknown quantities.

COTTON

ATLANTA, GEORGIA

Quissett Mill

New Bedford, Mass.



YARNS by QUISSETT

EITHER COTTON OR RAYON. SIGNIFY TO THE BUYER AND SELLER ALIKE . . . THE PRESTIGE OF PERFECTION

The reputation of the manufacturer of a product should be weighed as carefully as the advantages of the product itself.

The name Quissett . . . backed by the experience of nearly a quarter century of pioneering in yarn production . . . is an unwritten guarantee of the finest in materials, strength and uniformity.

Modern yarns . . . produced by 80,000 spindles . . . are up to the minute in every detail . . . quality yarns which make textile selling easier . . . yarns which reflect prestige wherever used.

1910 QUISSETT MEANS QUALITY 1933

Wm. H. Butler, Pres.
Edward H. Cook, Treas. Thomas F. Glennon, Agent

REVIEW OF THE YARN MARKET

December 19, 1932.

INTEREST in cotton yarns in December as indicated in cautious inquiry on the part of manufacturers was susceptible of no other conclusion than that an accumulation of business would engage the activities of spinners soon after the turn of the year, after inventories shall have been digested and the wholesale markets make a belated start in operating in spring goods. The Philadelphia yarn trade had little opportunity in December to enter contracts for 1933 deliveries, and necessarily the plant operation was slowed down for the holiday orders for spot shipment diminished in numbers and weights.

Deliveries of carded knitting yarns against a volume of orders placed during the August session have been well maintained. This supplied a backlog for spinners who seemed to find it expedient to maintain a fair stage of operation, according to representative commission houses in the Philadelphia trade. Besides the orders against contracts, there seeped through some new business during the first half of December. It came from a comparatively few manufacturers, one of whom, an up-state Pennsylvania operator, gave a number of dealers a chance to bid on supplying around 135,000 pounds of carded underwear counts. He placed a contract on the basis of 12 cents for 12s single on cones. About the same time a sale of 28s single was made for 17 cents, and a contract for 35,000 pounds of single combed peeler for underwear was placed at a reported price of two cents below the schedule.

This latter sale of combed at substantially under the list, following a movement of smaller quantities at competitive prices, was regarded the explanation for hastily called meetings of a group of combed yarn spinners who are assumed to consider prices conforming to the scheduled figure on the selling price of cotton, but are alleged—one or more—to have met the price of independents. It was stated on trustworthy authority that some of the group members expressed an intention to drop out unless the group were recruited to 100 per cent strength.

Mutterings of dissatisfaction in the combed yarn group seemed louder after a few days of price competition in mercerized yarns, when a number of mercerizers were virtually a chorus in quoting 55 cents for 60s/2, a drop of a nickel from a list to which there was general adherence until around the end of November, when it developed several independents had booked a large volume of business at a lower figure.

It seemed obvious that knit goods manufacturers, during a great part of December, were directing efforts toward breaking through the price structure, assuming the December 8 cotton crop estimate gave them an advantage. To the amazement of most traders, the estimated addition of over 700,000 bales to the previously reported crop was ignored, and yarns remained relatively firm after adjustment of quotations to light demand. Price cutters were said to embrace a few manufacturers who spin for their goods requirements and sell their surplus. It was not doubted that, while adjustment may have run the gamut for the time, large weights of carded yarn might be available at a substantial shading, dealers placing dependence on a January buying movement for a steadying of the market, rather than curtailment of output by spinners.

While knitting yarns have been in fair movement, weaving numbers continued draggy during December, with no demand of moment from either the plush or tapestry trades. A sizeable lot of carpet yarn was taken at 10 cents for 8s/3.

Philadelphia quotations published December 19 follow:

Single Skeins.

4s to 8s	12½	10s	12½ @13
12s	13 @13½	14s	13½ @14
16s	14 @14½	20s	14½ @15
24s	15½ @16	26s	16½ @17
30s	17½ @18		

Single Warps.

10s	13	12s	13½
14s	14	16s	14½
20s	14½ @15	26s	17
30s	18		

2-Ply Skeins.

8s	12½	10s	13
12s	13½	14s	14
16s	14½	20s	14½ @15
24s	16½	26s	17
30s	18	40s	24

Two-Ply Warps.

10s	13	12s	13½
14s	14	16s	14½
20s	15	24s	17
26s	17½	30s	18½
40s	25		

Frame Spun Carded Cones

8s	12½	10s	12½ @13
12s	13 @13½	14s	13½ @14
16s	14 @14½	18s	14½ @15
20s	15	22s	15½
24s	16	26s	17
30s	18	40s	24
30s double carded	20		
30s tying-in	17½		

Carpet Yarns.

8s and 9s white warp twist	12½ @13
8s tinged tubes	11½
8s part waste	10½

Two-Ply Combed Peeler Skeins and Warps.

8s to 16s	22 @23	20s	24
24s	25	30s	28
40s	33	50s	37
60s	41	70s	51
80s	61		

Single Combed Peeler Yarns on Cones.

10s	19½	14s	20½
16s	21	18s	21½
20s	22	24s	23
30s	26	36s	29
38s	30	40s	31
50s	35½	60s	40
70s	50	80s	60

Mule Spun Carded Yarn on Cones.

10s	18	12s	18½
14s	19	16s	19½
18s	20	20s	20½
24s	21½	28s	22½
30s	23½	40s	30

Mule Spun Combed Peeler Yarn on Cones.

10s	24	12s	25
14s	25½	16s	26
18s	26½	20s	27
22s	28	26s	29
28s	30	30s	31
36s	33½	38s	35
40s	36		

Tinged Insulating Yarns.

8s–1	11	10s–1	11½
12s–1	12		
8s–2	11	10s–2	11½
12s–2	12	20s–2	14½ @15

TEXTILE DEPURATOR

TURNING THE WHEELS OF PROGRESS

NEUTRALITE DETERGENT

Use

DEPURATOR XX

Because;

Its physico-chemical properties are accurately adjusted and balanced to Textile requirements.

It has powerful detergent action.

Its alkaline strength is mild, inoffensive and *controlled.*

It reduces surface and interfacial tension to the minimum.

Its wetting out properties are remarkable.

It causes perfect penetration of dyes and leveling of shades.

It has a maximum of efficiency and a minimum of cost.

"The proof of the pudding is in the eating."

Detergent Products Corporation

CLEANING IACO COMPOUND

PEACHTREE BUILDING

ATLANTA, GA.

TRISODIUM PHOSPHATE

for Cotton

To retain all the desirable qualities of your cotton fibres and release all the impurities, and thereby secure the best prices for your cotton yarn, knitwear or hosiery, use these Laurel Brand Products—

Laurel Textile Oil
Laurel Cotton Lubricants
Olive Savon Oils
Laurel Soluble Pine Oils
Laurel Cream Softener WN
Laurel SXG Oil
Hydrosol
Ruxite for softening

Solve all your Treating Problems with Laurel Brand

Laurel Soap Mfg. Co.

INCORPORATED

WM. H. BERTOLET & SONS
2600 E. Tioga St. Philadelphia

Textile Treatment Specialists since 1909

BECCO

WHAT IS BEHIND THIS RISE TO PROMINENCE?

Since the introduction five years ago of **Becco** to the arts in the United States and Canada, the **Becco** process has risen to the front ranks of popularity. Today **Becco** concentrated hydrogen peroxide is being used with outstanding success by leading mills on **all** kinds of fabrics. Results! That's the **Becco** secret of success. **Becco** is safe and gentle-acting. It is the newer way to bleach to a full, permanent white, with a softer feel and the original wearing qualities of the goods unimpaired. Get full details. Free demonstration.

BUFFALO ELECTRO-CHEMICAL CO.

BUFFALO, NEW YORK

BOSTON NEW YORK PHILADELPHIA CHICAGO CHARLOTTE
TORONTO MONTREAL

Settle that Dyestuff problem-
Standardize on

CAMEL DYES

If you are encountering uncertainties in the dyebath, we suggest a proven remedy . . .

USE CAMEL DYES!

Every modern laboratory control method is employed in the Campbell plant to assure dependable colors of uniform strength, shade and quality.

CAMEL DYES are available in a wide variety of shades, adaptable for all fabrics.

Write for information, samples and prices.

JOHN CAMPBELL & COMPANY

American Dyestuff Manufacturers
Established 1876

75 Hudson Street **New York City**

Get a softer boil —

use KAY!

Send for free samples of Kay and use it for boiling out before bleaching. You will be more than satisfied with the results.

KAY gets softer boil by reducing the soda. Has slight bleaching action and if any starch is present on warps it makes the starch soluble and easily washed out.

Use KALPINOL
(Sulphonated Pine Oil)

for boiling out in kier before bleaching. Removes natural oil and waxes from cotton. Reduces capillary action and allows alkalies to penetrate and give good even boil which assures quicker and more uniform bleaching. Opens up the fibres to receive bleach liquor.

Use HYDROXY
PENETRATING OILS

for dyeing, wetting out quickly, mercerizing in the kier.

The KALI Mfg. Co.
Manufacturing Chemists
1410 N. Front Street, Phila., Pa.

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TRADE MARK REG U S PAT. OFF.

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We maintain in our Technical Service Department a staff of experts in Alkali. These men have studied the problems of the various industries using Alkali and know their particular and individual needs. If you have a problem affected by soda ash, caustic soda, or any other alkali that is causing you anxiety, we will be pleased to have you correspond with SOLVAY SALES CORPORATION, 61 Broadway, New York City, or with the nearest branch office or distributor. If necessary, they will be glad to send a man who has specialized on your particular problem to assist you in working out a satisfactory solution.

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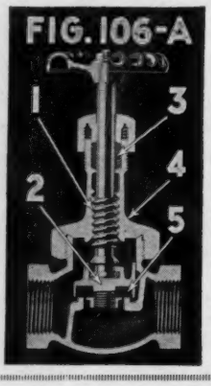

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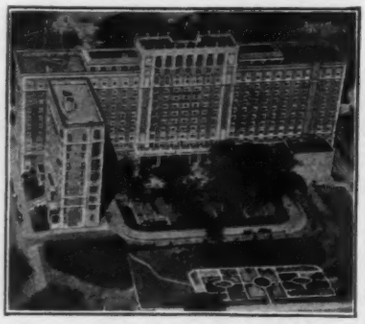

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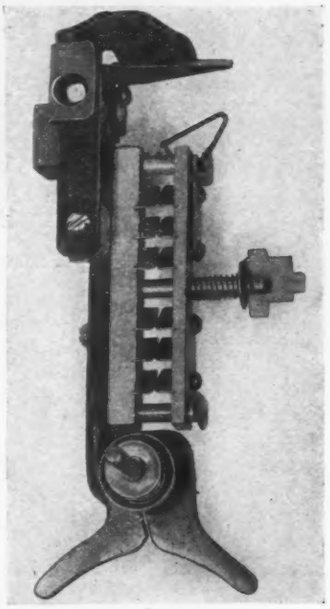

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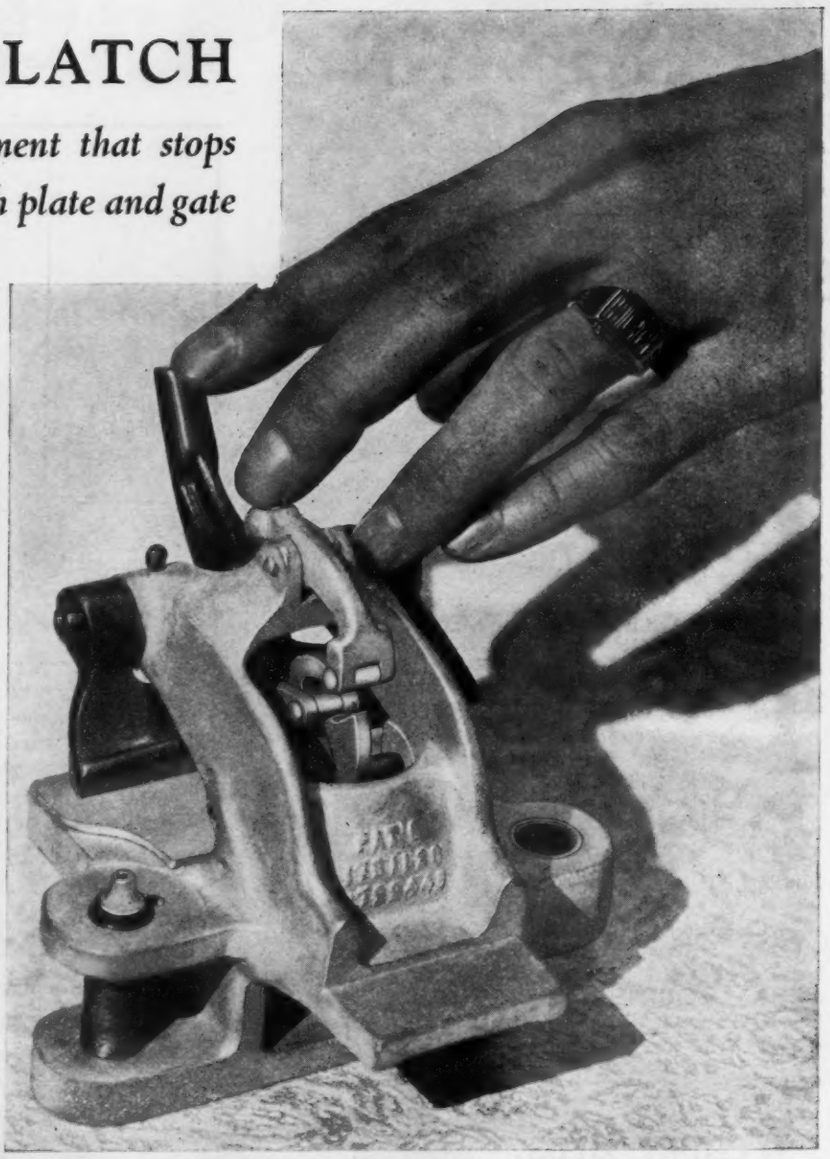

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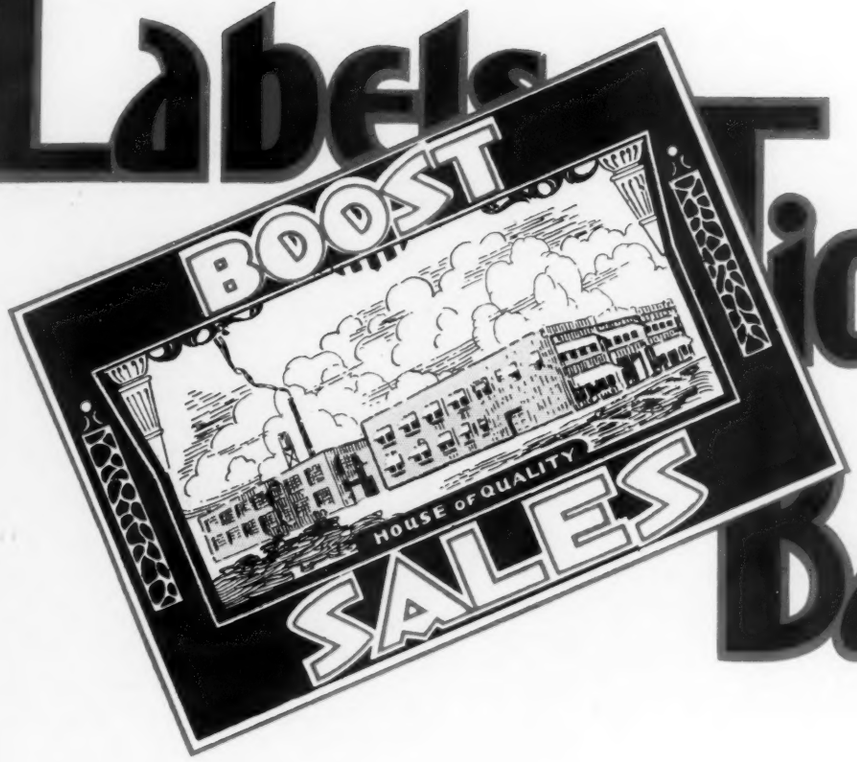

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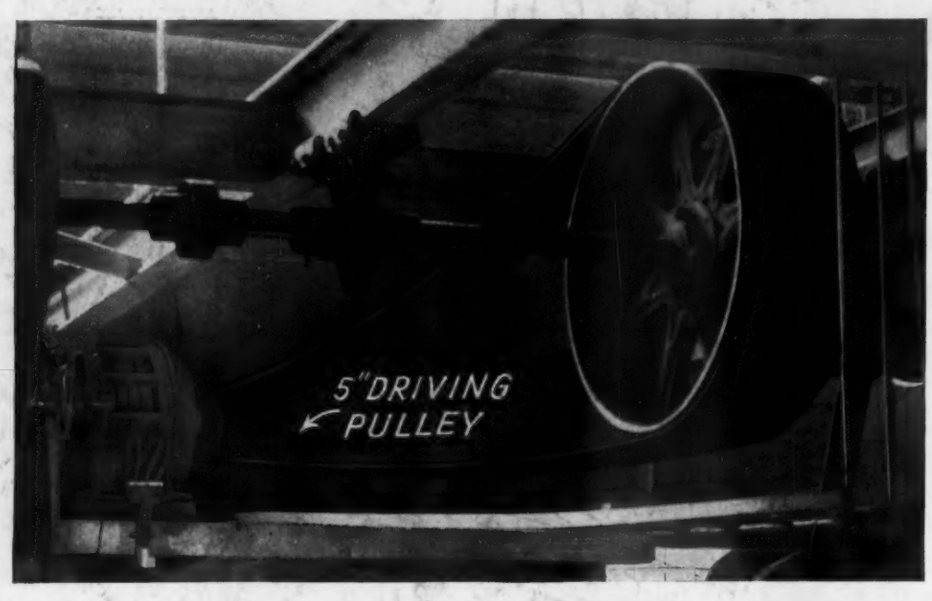

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